NATIONAL WEATHER SERVICE INSTRUCTION 30-2104
DECEMBER 19, 2003

Maintenance, Logistics, and Facilities

Systems/Equipment Maintenance, NWSPD 30-21

MAINTENANCE DATA DOCUMENTATION

NOTICE: This publication is available at: http://www.nws.noaa.gov/directives/.

OPR: W/OPS13 (M. deTommaso) **Certified by:** W/OPS1 (M. Paese)
Type of Issuance: Routine

SUMMARY OF REVISIONS: This directive supercedes National Weather Service (NWS) Instruction 30-2104, dated September 13, 2003 and has been revised to clarify and incorporate new and updated Maintenance Reporting Guidance.

Signed by December 5, 2003

John McNulty, Jr. Date
Director, Office of Operational Systems

Maintenance Data Documentation

Table of Contents: Page

1 Introduction. This instruction describes the Engineering Management Reporting System (EMRS) and the procedures necessary for collecting data, used to assess the reliability and maintainability (R&M) of weather surveillance systems. These systems are owned and/or maintained by the National Weather Service (NWS). The data collected by EMRS is vital to achieving maximum responsiveness to the missions of the NWS.

The EMRS is the primary field level maintenance data collection, analysis and report generation tool used by the NWS. EMRS data allows the NWS to:

a. Determine equipment R&M.

b. Anticipate equipment maintenance requirements and provide R&M data at the national, regional and field site levels.

c. Measure the effectiveness of equipment upgrades and modifications.

d. Provide configuration data for specific equipment and systems.

e. Provide evidence of equipment operational status for use in legal matters.

f. Monitor engineering resources expended on designated equipment.

g. Provide program performance data.

h. Assess equipment maintenance requirements, and assist in planning for future electronics staffing levels.

1.1 EMRS Data. The equipment tracked by EMRS varies in nature. Equipment such as the NWS Weather Surveillance Radar is large, stationary, and composed of many subsystems and communication links. The NWS radar network interfaces with weather surveillance radars operated by the Department of Defense, and Department of Transportation to form a national radar network. Other equipment is small, portable, and unique to the NWS. Some equipment is located at remote locations, such as on mountain tops or on offshore oil platforms.

There are three general classes of data in EMRS.

a. Equipment inventory.

b. Equipment maintenance data.

c. Maintenance activity information.

Data collected, via EMRS, is used to produce standard and ad hoc maintenance data analyses and reports. These analyses and reports are provided to NWS Program Managers, Regional Officials, field sites and other agencies. EMRS reports include equipment status accounting, the analysis of equipment Operational Availability (A_o), R&M and engineering modification. Maintenance activity data is provided to NWS Program Managers and is used to assess equipment maintenance requirements, and assist in planning for future electronics staffing levels.

The information entered into EMRS is accessible four different ways.

(1) EMRS Data Entry System.

(2) EMRS Web page at http://ops13web.nws.noaa.gov/pls/emrsuser/emrs_main.home

(3) End-User ad hoc query and analysis tools.

(4) Standardized or ad hoc reports.

2 Scope. The maintenance reporting requirements of this document apply to equipment designated by the Director of the Office of Operational Systems. Equipment codes for maintenance reporting are listed in Appendix C. Maintenance reporting begins upon the activation of a system or site, and continues through deactivation. All maintenance events, including site preparation work, are reported using EMRS. In addition, all Field Staff activities associated with contract maintenance, including contract maintenance oversight, is documented in the EMRS.

2.1 Legal Requirements. Once the Weather Service Form A-26, EMRS Maintenance Record (WS Form A-26) is completed and has been entered into the system, it is a legal record and can only be modified by contacting Weather Service Headquarters (WSH). There are no legal requirements to retain paper copies of the WS Form A-26 after data has been committed into the EMRS Data Entry System.

2.2 Point of Contact. Contact the WSH Maintenance, Logistics, and Acquisition Division, Configuration Branch, (W/OPS13) at (301) 713-1892, for information or assistance regarding EMRS.

2.3 Responsibilities.

2.3.1 Assistant Administrator for Weather Services (AA). The Assistant Administrator has overall responsibility for ensuring NWS-wide implementation of maintenance policy.

2.3.2 Directors, Office/Region/National Centers for Environmental Prediction. WSH Office Directors, Regional Directors, and the Director for the National Centers for Environmental Prediction are responsible for administering EMRS procedures within their organization. These responsibilities include:

a. Recommendation of equipment designated for tracking within EMRS.

b. Compliance with maintenance policy and EMRS procedures.

c. Assurance that personnel understand and carry out EMRS responsibilities.

2.3.3 Director, Office of Operational Systems (OPS). The Director has overall responsibility for implementing EMRS procedures and designating equipment for tracking within EMRS.

2.3.4 Director, Maintenance, Logistics, and Acquisition Division (OPS1). The Director provides fundamental engineering and acquisition services for the improvement of operational NWS systems. These responsibilities include:

a. Developing and maintaining EMRS.

b. Providing information essential to acquisition, operation, and support management. This includes defining inputs for reliability and maintainability estimates, standards, and goals.

c. Developing maintenance policies and EMRS procedures that are planned, integrated, and developed; in conjunction with logistics, acquisition, engineering, configuration management, and safety/environmental directives.

d. Ensuring NWS employees have access to EMRS.

2.3.5 Meteorologist-In-Charge (MIC), Hydrologist-In-Charge (HIC), Official-In-Charge (OIC)/Station Manager. The MIC, HIC, OIC and Station Manager are responsible for the day-to-day administration of EMRS procedures within their office. They will ensure that:

a. Office staff complies with EMRS procedures.

b. Site-specific EMRS procedures and guidance are developed and implemented.

c. Employees responsible for EMRS reporting carry out their responsibilities.

d. Site personnel are aware of EMRS reporting requirements.

2.3.6 NWS Employees Reporting Equipment Malfunctions. Employees will comply with maintenance policy and EMRS procedures, initiating maintenance requests using the EMRS Data Entry System. If there is no access to the data entry system, employees will follow locally established procedures to ensure proper notification and routing of the maintenance request.

2.3.7 NWS Employees Performing Maintenance Activities. Employees performing maintenance and maintenance related system administration on NWS equipment are responsible for documenting their maintenance activities using the EMRS Data Entry System. They are also responsible for completing all WS Form A-26s opened by other employees to request maintenance.

2.3.8 All Levels of Authority. All levels of authority will measure how effectively they have satisfied EMRS reporting requirements. All operating units will review EMRS maintenance activity, Operational Availability (A_o) and R&M reports.

3 General Instructions. The EMRS Data Entry System is a maintenance data collection and analysis tool that is accessed via the internet. The system requires internet connectivity and a web browser to transmit and receive data from a centralized database located at WSH, in Silver Spring, MD. The EMRS integrates web applications that aggregate all NWS field level maintenance reporting requirements, communications to the Electronics Staff, and maintenance data analysis into one web based application.

3.1 Accessing the EMRS. The EMRS is for official NWS use only. A valid username, and password are required to access the system. Contact WSH Maintenance, Logistics, and Acquisition Division, Configuration Branch (W/OPS13), at (301) 713-1892, for information or assistance regarding access to EMRS.

3.2 Maintenance Record, WS Form A-26. The Maintenance Record, or WS Form A-26, is used to report maintenance activity on all equipment designated by the Director of the Office of Operational Systems. Reportable maintenance activities include equipment outages, routine maintenance,

maintenance related system administration, activations, deactivations, and engineering modification implementation. See Appendix C for a listing of designated equipment.

3.3 Maintenance Data Reporting. Initiate a WS Form A-26 when a maintenance event occurs. A maintenance event is defined as any routine or non-routine maintenance activity associated with preventive maintenance, equipment failure, activation, deactivation, modification, or when special sampling is conducted. If more than one maintenance event is associated with a piece of equipment, a separate WS Form A-26 for each maintenance event is required. For example, if an Electronics Technician (ET) investigates a failure of a Radar Data Acquisition (RDA) equipment group, and a second ET investigates another non-related failure within the same RDA, each of these non-related maintenance events require a separate WS Form A-26.

Enter all information regarding the maintenance event. Incomplete data may lead to confusion about the maintenance performed or the outage that occurred. Use the EMRS Data Entry System to submit WS Form A-26s, to request maintenance, and to report maintenance activity. If there is no access to the data entry system, employees will follow locally established procedures to ensure proper notification of maintenance requests and documentation of maintenance activities.

Do not prepare a WS Form A-26 for equipment that is under contract maintenance, where parts are furnished and replaced by a contractor. However, if NWS Field Staff assist or perform maintenance on contract maintained equipment, report the maintenance activity performed by the NWS Field Staff, using the EMRS Data Entry System. This includes contract maintenance oversight.

3.3.1 Reportable Maintenance Events. There are five types of reportable maintenance events:

a. Corrective Maintenance - The remedial action to correct failures and restore system/equipment operation to prescribed capabilities and tolerances. This includes unplanned and non-periodic repairs, as well as systems administration performed as a result of evidence indicating a failure has occurred or is imminent.

b. Equipment Management - The accomplishment of equipment activations, deactivations, relocations, and other similar activities.

c. Modification - The authorized hardware and/or software configuration changes required to improve/extend systems or equipment operations/life or to satisfy new requirements.

d. Special Activity - The short-term or limited collection of data (special sampling) for specific purposes.

e. Preventive/Routine Maintenance - Maintenance actions performed on equipment to ensure continued operation within the prescribed capabilities or to minimize failure probability. Routine maintenance includes scheduled, planned or periodic preventive maintenance actions.

3.3.2 When to Originate a WS Form A-26. NWS Field Staff must submit an WS Form A-26 when:

a. An equipment failure occurs.

b. Equipment undergoes routine maintenance activities.

c. Equipment is relocated.

d. Special activity or sampling occurs.

e. Equipment is activated, deactivated or modified.

| 3.3.3 When to Commit a WS Form A-26. A WS Form A-26 is completed when all activities associated with the maintenance event are concluded. The EMRS Data Entry System will not permit a maintenance record to be completed unless all mandatory data fields are entered and the data meets validation requirements for consistency and logic. If data types and logic do not match, (e.g., the Close Date is later than the Current Date) a warning will be displayed on the computer screen. When data validation is complete and correct, the WS Form A-26 may be saved to the EMRS database.

NWS Field Staff should complete a WS Form A-26 when:

a. An outage is cleared and the equipment is returned to service.

b. Equipment is activated, deactivated, modified or relocated.

c. Regularly scheduled maintenance is completed.

d. Other maintenance activities are completed.

3.4 Disposition of WS Form A-26s. Once a WS Form A-26 has been saved to the EMRS database, there is no requirement to retain or forward hard-copies to WSH.

3.5 Maintenance Data Quality Control. Automated and manual processes provide quality control of EMRS data. Equipment performance measurements and maintenance data trends are computed and analyzed. Staff-hour information accumulates, and is monitored to assess Maintenance Staff requirements. Parts failure trends are monitored to highlight items with high failure rates. Configuration management data is loaded and reviewed. Maintenance goals, processes and directives are then modified to achieve maximum responsiveness to the missions of the NWS. All operating units review and monitor this data.

| 4 Maintenance Data Reporting Requirements. The EMRS Data Entry System is the primary field level maintenance data collection tool used by the NWS. Use the EMRS Data Entry System to:

a. Request maintenance activity on failed equipment.

b. Acknowledge maintenance request and document activities required to return a failed equipment to service.

c. Monitor and review maintenance activity on systems under your maintenance responsibility.

d. Report equipment outages, maintenance actions, activations, deactivations and engineering modifications on all equipment designated by the Director of the Office of Operational Systems. See Appendix C for a listing of reportable equipment.

e. Collect data associated with a short-term, special test or project.

There are five sequential steps that describe the EMRS Data Entry System maintenance data collection process.

(1) Originate - Maintenance or operational personnel "Originate" a WS Form A-26 to request maintenance.

(2) Open - Maintenance personnel access the EMRS Data Entry System and "Open" a WS Form A-26. "Open" refers to the process of documenting a WS Form A-26 electronically in the EMRS Data Entry System.

(3) Hold - If the maintenance event is not completed, the WS Form A-26 is placed on "Hold".

(4) Retrieve - The "Hold" maintenance record can be "Retrieved" at any time to update information.

(5) Commit - When the maintenance event is completed, the WS Form A-26 can be "Committed". The EMRS Data Entry System validates the data for consistency and logic. All "Committed" maintenance records can be viewed, but data can only be changed by contacting WSH.

4.2 Maintenance Record Description. Each block on the WS Form A-26 is identified by a number, letter or acronym. Completion of some blocks is mandatory, while information in other blocks provides additional information on the maintenance activity and is not mandatory.

4.2.1 General Information. The General Information section of the WS Form A-26 provides space for documenting maintenance event dates, maintenance requester's initials, response priority and a description of the event.

a. WFO (Weather Forecast Office) - The WFO station identifier is the three to five character site identifier of the office documenting the maintenance activity. This identifier is assigned by the National Weather Service Location Identifier (NWSLI) system.

b. Document Number - This unique number is generated automatically and identifies the maintenance event in EMRS. It is used to identify additional maintenance activities associated with the particular maintenance event.

c. Open Date - The open date is the date the maintenance event began or when the equipment malfunction was first noticed, in the mm/dd/yyyy format. This is the date when either the corrective or preventive maintenance started, equipment activation/deactivation began or an equipment modification began.

d. Open Time - The open time is the time when the malfunction was first noticed or the time maintenance began, in the format hh:mm. Use local time and a 24-hour time convention (for example: 3:15 pm is entered as 15:15).

e. Op Initials - The op's initials are the initials of the person initiating the maintenance record.

f. Response Priority - The response priority is based on local station equipment restoration priorities.

(1) Immediate Priority - If the equipment restoration justifies interrupting any other maintenance work-in-progress.

(2) Routine Priority - For next working day service.

(3) Low Priority - For service as time permits.

(4) Not applicable - For responses not having restoration priorities. Assign this priority to routine maintenance, activation, deactivation, relocation of equipment or a system.

g. Close Date - The close date is the date the maintenance event was completed, or when the equipment was returned to service, in the mm/dd/yyyy date format.

h. Close Time - The close time is the time the maintenance event was completed, or the time the equipment was returned to service, in the hh:mm format. Use the local time and a 24-hour convention.

i. Maintenance Description - The maintenance description identifies the malfunctioning equipment and the maintenance to be performed. It describes the symptoms observed. It also includes relevant information, such as the name of the equipment, location, and conditions or actions preceding the malfunction.

4.2.2 Equipment Information. The equipment information section provides space for identifying the equipment that is subject to the maintenance event. It describes the maintenance type, action taken and how the equipment failed. This section also provides space to describe the operational status of the equipment during the maintenance action. Standard codes are used to simplify data entry and enhance data analysis. Standard codes describe:

a. Station Identifier (SID) - The SID is the three to five character site identifier that describes the physical location of the equipment or system. This identifier is assigned by the National Weather Service Location Identifier (NWSLI) system.

b. Equipment Code - The equipment code identifies the specific type of equipment or system that is being maintained, activated, deactivated, or modified.

c. Serial Number (SN) - The serial number of the equipment. Refer to the local Site Equipment List for the serial number. If the Site Equipment List does not contain a serial number, see the ESA/AES for a serial number assignment.

d. Type of Maintenance (TM) - The TM code describes the type of maintenance performed. The TM codes are the main determinant of the method for completing the WS Form A-26. It is essential to select the proper TM code when documenting maintenance activities.

e. Action Taken (AT) - AT code describes the action taken to fix the problem. AT codes simplify data entry and increase the amount of EMRS information available to the analysts.

f. How Mal (How Malfunction) - The How Mal code describes the reason for the maintenance event; the type of malfunction that occurred.

NOTE: The WS Form A-26 Form is dynamic. That means that, depending on the maintenance event, once the Station ID, and Equipment Code are entered; two additional sections may appear. They are Equipment Operational Status Times and Parts Usage and Configuration Management Reporting.

4.2.3 Equipment Operational Status Times. The Equipment Operational Status Times describe the operational status of the equipment or system identified in the Equipment Information Section during the maintenance event. Operational status hours are grouped into two categories, "Logistics" and "All Other".

a. Fully Operational - Equipment is "Fully Operational" when it is operating with no loss of output of intended products or functions.

b. Partially Operational - Equipment is "Partially Operational" when it is operating in an impaired, degraded or reduced mode; but is still able to perform or produce at least one of its primary functions.

(1) Logistics Delay - This is the duration of the time the system or equipment was "Partly Operational" due to a logistics delay.

(2) All Other - This is the duration of time the system or equipment was "Partly Operational" due to other reasons.

c. Not Operational - Equipment is "Not Operational" when the system is not functioning. There is a loss of all primary product(s), or the equipment cannot perform its primary function.

(1) Logistics Delay - This is the duration of time the system or equipment was not operational due to a logistics delay.

(2) All Other - This is the duration of time the system or equipment was not operational due to other reasons.

4.2.4 Parts Usage and Configuration Management Reporting. The Parts Usage and Configuration Management Reporting section provides space for documenting parts failure and replacement data. For each part that fails and is replaced, the Agency Stock Number (ASN) and Serial Number (SN) of the failed part is documented in this section. In addition to the failed part information Vendor Part Number (VPN) and Serial Number of the replacement part is also documented.

4.2.5 Work Load Information. The work load information section provides space for documenting maintenance activity hours. There are five categories of staff-hours that describe the time spent on the maintenance activity. They are:

(1) Routine - Routine time is the time spent performing routine scheduled maintenance.

(2) Non-Routine - Non-Routine time is the time spent performing unscheduled/corrective maintenance to restore equipment.

(3) Travel - Travel time is the total time spent traveling.

(4) Miscellaneous - Miscellaneous time is the total time spent working on equipment that is not included under Routine, Non-Routine, or Travel categories.

(5) Overtime - Overtime is the number of hours spent making repairs (non-routine), traveling, performing scheduled maintenance (routine) or miscellaneous activities that occur while in overtime status.

NOTE: Overtime is a subset of the staff-hour categories 1-4 described above. Overtime can never be the only category listed on a completed WS Form A-26.

4.2.6 Miscellaneous and Special Purpose Reporting Information. The miscellaneous information section provides space for documenting additional information that may be required to fully describe the maintenance event. This section provides space for maintenance comments, initials of the person completing the maintenance, engineering modification identification, and implementation dates. There are also blocks for indicating when equipment or systems are activated or deactivated. This section is also used for special reporting as directed by WSH.

NOTE: When applicable, the miscellaneous information section is also used to document the unique trouble ticket numbers used by operational support facilities, maintenance contractors, or other agencies.

4.3 Data Validation Conventions. The EMRS Data Entry System compares WS Form A-26 information fields for consistency and logic. AT codes are compared to TM codes to ensure compatibility of data. See Appendix B for these data validation conventions.

4.4 Deletion of a WS Form A-26. Contact WSH, W/OPS13 at (301) 713-1892, to delete a "Committed" WS Form A-26. WS Form A-26s on "Hold" status may be deleted by the Field Staff.

4.5 Block-By-Block Instructions. Instructions for completing a WS Form A-26 are presented in Table 4-1. Mandatory entries are marked with an asterisk (*) below the block name.

Table 4-1. Instructions for Completing WS Form A-26.

BLOCK NAME	DESCRIPTION
General Information	Prepare the General Section when: a. An equipment failure occurs. b. Equipment undergoes routine maintenance activities. c. Equipment is relocated. d. Special sampling occurs. e. Equipment is activated, deactivated or modified. f. Maintenance related system administration is accomplished.
Document Number	This unique document number is generated automatically and identifies the maintenance event in EMRS. It is used to identify additional maintenance activities associated with the particular maintenance event.
Open Date *	Enter the date the maintenance event began or when the equipment malfunction was first noticed in the mm/dd/yyyy format. This is the date when either the corrective or preventive maintenance started, equipment activation/deactivation began or an equipment modification began. The Open Date cannot be later than the current date.
Open Time *	Enter the time when the malfunction was first noticed or the time maintenance began in the format hh:mm. Use local time and a 24-hour time convention. Example: 3:15pm is entered as 15:15.
Op Initials	Enter the initials of the person initiating the maintenance record.
Response Priority *	Annotate the Response Priority based on local station equipment restoration priorities. 1. Immediate Priority - Used if the equipment restoration justifies interrupting any other maintenance work-in-progress. 2. Routine Priority - Used for next working day service. 3. Low Priority - Used for service as time permits. 4. Not Applicable - Used for responses not having restoration priorities. Assign this priority to routine maintenance, activation, deactivation, or relocation of equipment or a system.
Close Date *	Enter the date the maintenance event was completed, or when the equipment was returned to service, in the mm/dd/yyyy date format. The Close Date cannot be later than the current date.
Close Time *	Enter the time the maintenance event was completed, or the time the equipment was returned to service in the hh:mm format. Use the local time and a 24-hour time convention.

BLOCK NAME	DESCRIPTION
Maintenance Description	Identify the malfunctioning equipment and the maintenance to be performed. Describe the symptoms observed. Include relevant information, such as the name of the equipment, location, and conditions or actions preceding the malfunction.
Equipment Information	This section refers to the equipment associated with the maintenance event. Do not confuse this section with the Parts Failure Information section. The Parts Failure Information section addresses Lowest Replaceable Unit (LRU) failures.
Station ID (SID) *	Enter the three to five character Site Identifier (SID) that describes the physical location of the system or equipment. This may be the same as or different from ESA/ET Station ID (HID). The SID will be validated against official SID data in the NWS Location Identifier (NWSLI) system. Do not use equipment identifiers in this block. Example: Radar, NWR, and Surface Equipment often have distinct alphanumeric identifiers used for system identification.
Equipment Code *	Enter the Equipment Code listed in Appendix C that corresponds to the equipment being maintained, activated, deactivated or modified.
Serial Number *	Enter the serial number of the equipment. Refer to the local Site Equipment List for the serial number. If the Site Equipment List does not contain a serial number, see the ESA/AES for a serial number assignment.
TM *	TYPE MAINTENANCE - Enter the code that describes the maintenance performed. TM Codes are found in Appendix B.
AT *	ACTION TAKEN - Enter the code that describes the activities needed to restore the equipment to operational status or complete the maintenance event. The action refers to the equipment or system described in the Equipment Information section. AT Codes are found in Appendix B.
How Mal. *	HOW MALFUNCTION - Enter the code that describes the malfunction of the system or equipment described in the Equipment Information section. How Mal. codes describe the cause of the problem, malfunction, or outage that required the maintenance activity. See Appendix B for a listing of How Mal. Codes.

BLOCK NAME	DESCRIPTION
Equipment Operational Status Times	This section describes the operational status of the equipment or system identified in the Equipment Information section . The status times reflect the length of time the equipment was in a specific operational status. Operational status hours are grouped into two categories - "Logistics" and "All Other". An operational status of "Logistics Delay," shows the time spent waiting for parts or other logistics activities. Charge time not associated with a logistics delay to the "All Other"category. The "All Other" category includes delay time when the ET is not on duty. It also includes delay time due to weather, travel conditions, or when staff has been assigned to a higher priority maintenance activity. The Field Staff determines the operational status of the equipment for the duration of the maintenance event and enters the total hours in the appropriate category. The total time elapsed between the Open Date/Time and Close Date/Time, MUST EQUAL the sum of the operational status times.
Fully Operational	Enter the duration of time the system or equipment was "Fully Operational" in the hhh:mm format. Equipment is "Fully Operational" when it is operating with no loss of output of intended products or functions.
Partly Operational (Logistics Delay)	Logistics Delay - Enter the duration of time the system or equipment was "Partly Operational" due to a logistics delay in the hhh:mm format. Equipment is "Partly Operational" when it is operating in an impaired, degraded or reduced mode; but is still able to perform or produce at least one of its primary functions.
Partly Operational (All Other)	All Other - Enter the duration of time the system or equipment was "Partly Operational" due to other reasons in the hhh:mm format. Equipment is "Partly Operational" when it is operating in an impaired, degraded or reduced mode; but is still able to perform or produce at least one of its primary functions.
Not Operational (Logistics Delay)	Logistics Delay - Enter the duration of time the system or equipment was not operational due to a logistics delay in the hhh:mm format. A piece of equipment is "Not Operational" when the system is not functioning. There is a loss of all primary product(s), or the equipment cannot perform its primary function.
Not Operational (All Other)	All Other - Enter the duration of time the system or equipment was not operational due to other reasons in the hhh:mm format. A piece of equipment is "Not Operational" when the system is not functioning, there is a loss of all primary product(s), or the equipment cannot perform its primary function.
Parts Failure Information	This section describes the maintenance performed on failed parts, for the equipment or system described in the Equipment Information section.

BLOCK NAME	DESCRIPTION
ASN	Agency Stock Number refers to the LRU that is the subject of the maintenance. Enter the ASN from the Instrumental Equipment Catalog (EHB-1). Include hyphens when entering the ASN. If there is no ASN, enter the manufacturer's part number. If there is no manufacturer's part number, enter a description of the part. Enter "None" if a description is not available.
Vendor Part Number (New Part)	Vendor Part Number refers to the replacement LRU. Enter the uniquely identifying vendor part number assigned by the vendor or manufacturer. If there is no Vendor Part Number, enter a description of the part. Enter "None" if a description is not available.
Serial Number (Old Part)	This Serial Number refers to the LRU being replaced. Enter the uniquely identifying serial number assigned by the vendor or manufacturer. Enter "None" if a serial number is not available.
Serial Number (New Part)	This Serial Number refers to the replacement LRU. Enter the uniquely identifying serial number assigned by the vendor or manufacturer. Enter "None" if a serial number is not available.
Work Load Information	This section identifies the staff hours required to complete the maintenance event. Enter time in the hhh:mm format. Staff hours are divided into five categories. a. Routine. b. Non-routine. c. Travel. d. Miscellaneous. e. Overtime.
Routine	Enter the total time spent performing routine scheduled maintenance in the hhh:mm format. Report time spent on routine monitoring of remote systems, (e.g., ASOS), as routine hours. This does not include the re-setting of maintenance flags. Include the total time spent performing the maintenance, even if a portion of the time was overtime. Report any overtime in the Overtime category.
Non-Routine	Enter the time spent performing unscheduled/corrective maintenance to restore equipment in the hhh:mm format. Report corrective maintenance of remote systems by electronic communications in this category. This includes the re-setting of maintenance flags (e.g., ASOS). Include the total time spent performing maintenance, even though a portion of the time was overtime. Report any overtime in the Overtime category.

BLOCK NAME	DESCRIPTION
Travel	Enter total travel time in the hhh:mm format. Include the total time spent performing travel, even though a portion of the time was overtime. Report any overtime in the Overtime category.
Miscellaneous	Enter total time spent working on equipment not included under Routine, Non-Routine, or Travel categories. Include the total time spent performing maintenance, even though a portion of the time was overtime. Report any overtime in the Overtime category.
Overtime	Enter the number of overtime hours spent making repairs (non-routine), traveling, performing scheduled maintenance (routine) or miscellaneous activities. Overtime cannot be the only entry in the Work Load Information section. The total number of hours in the Routine, Non-Routine, and Travel categories MUST BE GREATER THAN OR EQUAL to the number of overtime hours reported.
Miscellaneous Information	The information in this section includes maintenance comments and the initials of the person performing the maintenance.
Comments	Enter information that describes the maintenance event, parts ordered, notes or other information that supports the activity. A comment is required if there is difficulty (excessive delay, unexpected severe weather, etc.) or other events that occurred during the maintenance event.
Initials *	Enter the initials of the person completing the maintenance event.
Special Purpose Reporting	The information in this section includes engineering modification/activations/deactivation dates, WSH directed reporting data and trouble ticket numbers. WSH directed reporting requirements are issued, when needed, by the Engineering Division for special equipment maintenance related studies. Enter this information as required when directed by WSH.
Mod. No.	Modification Number - Enter the assigned hardware or software modification note, maintenance note, or Request for Change (RC) number as directed by WSH or Regional Headquarters. If a Modification Number has not been assigned, enter "None". An entry is required if an Action Taken (AT) code of "M" (Modification) is used.
Mod./Act./Deact. Date	Modification/Activation/Deactivation Date - Enter the date the modification/ activation/deactivation was completed in the mm/dd/yyyy format. An entry is required if an Action Taken (AT) code of "M" (Modification), "A" (Activate), or "B" (Deactivate) is used.
Block C	Enter data as directed by the Engineering Division.

BLOCK NAME	DESCRIPTION
Block D	Enter data as directed by the Engineering Division.
Block E	Enter data as directed by the Engineering Division. See Appendix D for ASOS specific reporting instructions.

5 References. The following references contain greater detail.

NWSPD 30-11, Engineering Modifications

NWSPD 30-12, Configuration and Data Management

NWSI 30-1201, Data Management

NWSI 30-1202, Engineering Drawings

NWSI 30-1203, Configuration Management for Operational Systems

NWSI 30-1204, Site Identifiers

NWSPD 30-21, System Maintenance

NWSI 30-2101, System Maintenance Management

NWSI 30-2106, Radar Maintenance

NWSI 30-2107, NOAA Weather Radio Maintenance

NWSI 30-2108, Surface Equipment Maintenance

NWSI 30-2110, Hydrologic Maintenance

NWSI 30-2111, ASOS Maintenance

NWSPD 30-22, Technical Orders

NWSI 30-2201, Engineering Documentation

NWSPD 30-31, Logistics Planning and Operations

NWSI 30-3101, Supply Manual and Catalog

APPENDIX A - ACRONYMS

Table of Contents: Page

1 Acronym Descriptions

Acronym	Description
A_o	Operational Availability
AA	Assistant Administrator for Weather Services
A-26	WS Form A-26, EMRS Maintenance Record
ACN	AWIPS Communication Network
ACT	Activation(s)
AES	Area Electronics Supervisor
AOMC	ASOS Operations and Monitoring Center
ASN	Agency Stock Number
ASOS	Automated Surface Observing System
AT	Action Taken Code
AWIPS	Advanced Weather Interactive Processing System
BIT	Built-in-Test
CLS	Consolidated Logistics System
CM	Configuration Management
CMIS	Configuration Management Information System
COTS	Commerical Off-The-Shelf
CRS	Console Replacement System
DAPM	Data Acquisition Program Manager
DEACT	Deactivation(s)
ECP	Engineering Change Proposal
EHB	Engineering Handbook
EMRS	Engineering Management Reporting System
EPM	Electronics Program Manager

Acronym	Description
EQUIP	Equipment
ESA	Electronic Systems Analyst
ET	Electronics Technician
FMK	Field Modification Kit
GSA	General Services Administration
H-14	WS Form H-14, Equipment Return Tag
HIC	Hydrologist-In-Charge
HMT	Hydrometeorological Technician
HOW MAL.	How the System Malfunctioned
ID	Identification
LRU	Lowest Replaceable Unit
MDC	Maintenance Data Collection
MIC	Meteorologist-In-Charge
MOD	Modification(s)
NCF	(AWIPS) Network Control Facility
NEXRAD	Next Generation Radar
NLSC	National Logistics Supply Center
NOAA	National Oceanic and Atmospheric Administration
NOAA Form 37-4	Stores Requisition
NRC	National Reconditioning Center
NSN	National Stock Number
NWR	NOAA Weather Radio
NWS	National Weather Service
NWSI	National Weather Service Instruction Manual
NWSLI	NWS Location Identifier
OIC	Official-In-Charge
PC	Personal Computer
QCI	Quality Control Inspection

Acronym	Description
OPS	Office of Operational Systems
OPS1	Maintenance, Logistics and Acquisition Division
OPS13	Maintenance, Logistics and Acquisition Division, Configuration Branch
R&M	Reliability and Maintainability
RC	Request for Change
RMS	Regional Maintenance Specialist
ROC	Radar Operations Center
SIB	Systems Integration Branch
SID	Station Identifier
SN	Serial Number
TELCO	Telephone Company
TIP	Technical Information Package
TM	Type Maintenance Code
URL	Uniform Resource Locator
VPN	Vendor Part Number
WFO	Weather Forecast Office
WKL	Work Load
WS Form A-26	Weather Service Form A-26
WSH	National Weather Service Headquarters, Silver Spring, Maryland
WSR-88D	Weather Surveillance Radar - 1988 Doppler

APPENDIX B - ENGINEERING MANAGEMENT REPORTING SYSTEM (EMRS) DATA VALIDATION CONVENTIONS

Table of Contents: Page

1 Engineering Management Reporting System (EMRS) Data Validation Conventions.

1.1 Type Maintenance Codes. Type Maintenance (TM) codes and Action Taken (AT) codes are compared for consistency. Valid AT codes are listed for each TM in Table B-1.

Table B-1. Valid TM Codes.

TM CODES	DEFINITION	REMARKS
C	Corrective	Maintenance action(s) to correct real or suspected equipment failure(s) occurring between regularly scheduled maintenance periods. Although some of the actions taken maybe the same as those initiated during preventive maintenance, correction rather than prevention is the reason the work was begun. Valid AT codes: C, D, E, F, G, J, L, N, P, R, S, T, V, W, X, Y, Z.
E	Equipment Management	Contract maintenance monitoring, activations, deactivations, relocations, or other similar activities. Valid AT codes: A, B, D, E, J, K, M, Q, R, T, W, X, Z.
M	Modification	Applies to all authorized hardware and software configuration changes to a system, equipment, or assembly. Valid AT codes: C, D, E, H, L, M, T, W, X, Y, Z.
S	Special Activity or Sampling	Short-term or limited collection of data for specific purposes. Valid AT codes: A, B, C, D, E, F, G, H, J, K, L, M, N, Q, R, S, T, V, W, X, Y, Z.

TM CODES	DEFINITION	REMARKS
Z	System Administration Maintenance	Managing software operating systems and overseeing systems performance including managing user access and privileges, configuring devices, making backups, training users, managing system security, installing approved operating system software changes, and resolving fault isolation issues (e.g., software vs. hardware failures). Valid AT codes: D, E, H, J, M, T, W, Y, Z.
1	As Required	Preventive/Routine maintenance performed as required. Not regularly scheduled. Valid AT Codes: C, D, E, F, G, H, J, L, R, S, T, V, W, X, Y, Z.
2	Weekly	Regularly scheduled Preventive/Routine maintenance. Valid AT Codes: C, D, E, F, G, H, J, L, R, S, T, V, W, X, Y, Z.
3	Semi-Monthly	Preventive/Routine maintenance. Valid AT Codes: C, D, E, F, G, H, J, L, R, S, T, V, W, X, Y, Z.
4	Monthly	Regularly scheduled Preventive/Routine maintenance. Valid AT Codes: C, D, E, F, G, H, J, L, R, S, T, V, W, X, Y, Z.
5	60-Day	Regularly scheduled Preventive/Routine maintenance. Valid AT Codes: C, D, E, F, G, H, J, L, R, S, T, V, W, X, Y, Z.
6	Quarterly	Regularly scheduled Preventive/Routine maintenance. Valid AT Codes: C, D, E, F, G, H, J, L, R, S, T, V, W, X, Y, Z.
7	Semi-Annual	Regularly scheduled Preventive/Routine maintenance. Valid AT Codes: C, D, E, F, G, H, J, L, R, S, T, V, W, X, Y, Z.
8	Annual	Regularly scheduled Preventive/Routine maintenance. Valid AT Codes: C, D, E, F, G, H, J, L, R, S, T, V, W, X, Y, Z.

1.2 Hardware Action Taken Codes. Hardware Action Taken (AT) codes and Type Maintenance (TM) codes are compared for consistency. Valid TM codes are listed for each AT in Table B-2. Software AT codes are coded separately and shown in another table. See Table B-3 for Software AT codes.

Table B-2. Hardware AT Codes.

AT CODE	DEFINITION	REMARKS
A	Activate	Use this code to mark the addition of the equipment or system into EMRS. Valid for TM = E, S.
B	Deactivate	Use this code to mark the removal of equipment or systems from EMRS. Valid for TM = E, S.
C	Calibrate/ Re-calibrate/Align	Use this code when the primary activity was a calibration or alignment. Valid for TM = C, M, S, 1-8.
D	Run Diagnostics	Use this code to identify a hardware troubleshooting effort. Valid for TM = C, E, M, S, Y, Z, 1-8.
E	Remote Monitoring	Use this code when maintenance is performed without visiting the site. This maintenance can be routine or non-routine. Do not use this code for remote technical support from operational support facilities. Valid for TM = C, E, M, S, Z , 1-8.
F	Repair	Use this code for repair of a larger end item without replacement of any parts or hardware, such as, tightening of loose screws or rerouting cables. Use AT = R or G, as applicable, for replaced hardware. Valid for TM = C, S, 1-8.
G	Repair/Replace Minor Parts	Use this code for repair or replacement of minor parts or hardware (piece parts). "Minor parts or hardware" includes screws, seals, etc. This code differs from Code F (Repair). Use Code R (Remove and Replace) for the replacement of larger items, such as, printed circuit boards, power supplies, or any Line Replaceable Unit (LRU). Valid for TM = C, S, 1-8.
J	Contact Telephone Company (TELCO)/ Other Agency	Use this code for activity involved with representatives of utility service providers or other agencies. May also refer to repairs made to associated equipment causing NWS equipment outages by outside representatives. Valid for TM = C, E, S, Z, 1-8.

AT CODE	DEFINITION	REMARKS
K	Relocate	Use this code for activities required to move equipment or systems from one location to another within a site (SID). Equipment must have been operational at the previous location and is expected to become operational in the new location. Valid for TM = E, S.
L	Adjust	Use this code for actions related to electrical adjustments, reseating of components, resetting interlocks or breakers, or similar actions correcting the discrepancy or condition. If the primary cause of the malfunction was a faulty part rather than an adjustment, use a code to reflect a replacement vs. an adjustment. Valid for TM = C, M, S, 1-8.
M	Modify As Directed	Use this code for work that is accomplished under authorized hardware or software modifications. May also be used to report upgrades to current configurations (retrofitting), request for change implementation, and standardization efforts. Valid for TM = E, M, S, Y, Z.
N	Temporary Repair	Use this code for emergency repair that is temporary in nature and will require a permanent resolution at a later date. Do not use this code as a final action, unless directed by the Engineering Division. Valid for TM = C, S.
Q	Quality Control Inspection	Use this code for quality control inspections of equipment or systems. Valid for TM = E, S.
R	Remove and Replace	Use this code for removal and replacement of an assembly, printed circuit board, power supply, or any LRU. Code R differs from Codes F (Repair) and G (Repair/Replace Minor Parts). Valid for TM = C, E, S, 1-8.
S	Remove and Reinstall	Use this code when an item is removed to gain access to another item. Example: A printed circuit board is removed and replaced to see if a problem is corrected. Removal of the circuit board does not cause the malfunction to cease, but leads to the eventual correct conclusion through the process of elimination. Activity should be coded as a Remove and Reinstall not a Removal and Replacement. Valid for TM = C, S, 1-8.

AT CODE	DEFINITION	REMARKS
V	Clean	Use this code for removal of corrosion, dirt, ice, or another foreign substance. Also for the removal of paint and residue in preparation for repainting. Valid for TM = C, S, 1-8.
X	Test/Inspect/ Service	Use this code for the maintenance of mechanical equipment such as generators or hoists where regular servicing intervals are known. Servicing involves the removal and replacement of an item expected to become contaminated or made useless. Some examples of servicing include filter changes, fluid replacement, greasing of moving parts, and painting. Valid for TM = C, E, M, S, 1-8.
Y	Troubleshoot	Use this code when failure isolation activities require 15 minutes or more to correct or determine the cause of failure. Valid for TM = C, M, S, Z, 1-8.
Z	System Administration	Use this code for activities related to managing software operating systems and overseeing systems performance. This includes managing user access and privileges, configuring devices, making backups, training users, managing system security, installing approved operating system software changes, and resolving fault isolation issues (e.g., software vs. hardware failures). Valid for TM = C, E, M, S, Y, Z, 1-8.

1.3 Software Action Taken Codes. Software Action Taken codes and Type Maintenance (TM) codes are compared for consistency. Valid AT codes are listed in Table B-3.

Table B-3. Software AT Codes.

CODE	DEFINITION	REMARKS
D	Run Diagnostics	Use this code for activities accomplished to support software troubleshooting efforts. Valid for TM = C, E, M, S, Y, Z, 1-8.
E	Remote Monitoring	Use this code for maintenance performed without visiting the equipment site. Maintenance can be routine or non-routine, but does not include instances where the technician is directing the actions of another person in non-routine maintenance actions from a remote location. Valid for TM = C, E, M, S, Z, 1-8.

CODE	DEFINITION	REMARKS
H	Backup/Archiving	Use this code for software related activity typically related to preventive maintenance. This code by itself does not indicate a software failure, since backup and archiving are part of normal preventive software maintenance. Valid for TM = M, S, Y, Z, 1-8.
M	Modify as Directed	Use this code to report all authorized hardware and software configuration changes to a system, equipment, or assembly. Valid for TM = E, M, S, Y, Z.
T	Load/Patch/ Upgrade	Use this code for software related activity related to corrective or preventive maintenance when the software Load/Patch/Upgrade corrects a real or anticipated malfunction or failure. Valid for TM = C, E, M, S, Y, Z, 1-8.
W	Reboot	Use this code when shutdown and restart of the Central Processing Unit (CPU) is required. Valid for TM =C, E, M, S, Y, Z, 1-8.

1.4 How Malfunction Codes. Table B-5 contains the listing of the How Malfunction (How Mal) codes.

Table B-5. How Mal Codes.

TYPE OF MALFUNCTION	CODE	DESCRIPTION
Physical & Mechanical	101	Outage, failure, or malfunction caused by or related to faulty, bent, buckled, collapsed, corroded, cut, broken, burned or missing equipment.
Weather Related	201	Outage, failure, or malfunction caused by or related to wind, rain, hail, snow or extreme temperatures.
Communications	204	Outage, failure, or malfunction caused by or related to external communications.
Lightning	210	Outage, failure, or malfunction caused by or related to a real or suspected lightning strike to or near by the system or equipment.
Software	301	Outage, failure, or malfunction caused by or related to software or firmware.
Electrical/Electronic	401	Outage, failure, or malfunction caused by or related to a faulty electrical or electronic LRU or component.
BIT Indicated Fault	406	Outage, failure, or malfunction identified by Built-In-Test (BIT) algorithm.

TYPE OF MALFUNCTION	CODE	DESCRIPTION
Unknown/Other	901	Outage, failure, or malfunction caused by unknown, unidentified or otherwise not listed source.
No Defect	902	Outage caused by associated equipment failure or commercial power outage.
Not Applicable	999	No failure. Action taken to facilitate other maintenance activity.

APPENDIX C - EMRS EQUIPMENT CODES

Table of Contents: Page

1 EMRS Equipment Codes. The Program Codes and Reporting Requirement Codes shown in Table C-1 are presented as reference items to support WS Form A-26 Equipment Codes. WS Form A-26 Equipment Codes are listed in Table C-2.

Table C-1. Program and Maintenance Reporting Codes

PROGRAM CODES	
A = AFOS	N = NWR/CRS
C = Communications	Q = Radar, Doppler
D = Radar, Conventional	R = Radar, WSR-88D
E = Information Systems	S = Surface, ASOS
F = Facilities	T = Surface
H = Hydrology	U = Upper Air
I = AWIPS	X= Miscellaneous

REPORTING REQUIREMENT CODES
1 = Workload Only
2 = Reliability, Maintainability and Workload
3 = Reliability, Maintainability Workload and Configuration Management
4 = Workload and Configuration Management

Table C-2. WS Form A-26 Equipment Codes.

EQUIPMENT	PROGRAM CODE	REPORTING CODE	DESCRIPTION
AACU	S	4	ASOS Acquisition Control Unit
ACOMM	S	4	ASOS External Communications
ADCP	S	4	ASOS Data Collection Package
ADMIN	X	1	Incidental Administrative Work (used to report time expended on administrative activities/use)
ADR	H	1	Level Recorder, F&P Series 1540/1542, NWS-Owned with Telephone or Satellite Communications
AFXR	C	1	Alden Fax Receiver
AFXS	C	1	Alden Fax Scanner

EQUIPMENT	PROGRAM CODE	REPORTING CODE	DESCRIPTION
AGTA	S	4	ASOS Ground-to-Air Radio
AHTB	S	4	ASOS Liquid Precipitation Accumulation Sensor (Rain Gauge)
AMDLS	T	1	Agriculture Meteorological Data Logger
AMOS	T	1	Automatic Meteorological Observing System, Model 3-70/73
APER	S	4	ASOS Peripherals (OID, VDU, CVD and printer)
APRES	S	4	ASOS Pressure Sensor
APWX	S	4	ASOS Present Weather Sensor
ARC	H	1	Automatic Remote Collector (Handar Model 540)
ARD	I	3	AWIPS Remote Display System (Computer, Monitor, Printer, UPS, Router, Cables)
ART1	U	3	Automatic Radiotheodolite (Reconfigured GMD)
ART2	U	3	Automatic Radiotheodolite (Reconfigured WBRT)
ARTML	U	3	Upper Air Microwave Link
ASCA	S	4	ASOS Single Cabinet Assembly
ASKY	S	4	ASOS Cloud Height Sensor (Ceilometer)
ASOSP	S	4	ASOS System Administration and Preventive Maintenance
ATDP	S	4	ASOS Temperature and Dew Point Sensor
ATIR	U	3	CV-700 Automatic Radio Direction Finder
ATRHS	U	3	RSOIS Air Temperature/Relative Humidity Sensor
ATS	S	4	ASOS Thunderstorm Sensor
AVIS	S	4	ASOS Visibility and Day/Night Sensor
AWIND	S	4	ASOS Wind Subsystem
AWIPS	I	4	Automated Weather Interactive Processing System
AWLE	E	1	AWIPS-Like Equipment Systems Administration
AWLNX	I	3	AWIPS Linux Workstations/Servers

EQUIPMENT	PROGRAM CODE	REPORTING CODE	DESCRIPTION
AWPAG	S	4	ASOS All Weather Precipitation Accumulation Gauge (AWPAG) - Dual Gauge Configuration
AZR	S	4	ASOS Freezing Rain Subsystem
B220	N	1	NWR 1.25-KW Transmitter
B222	N	1	Dual NWR 1-KW Transmitter (SRS)
B224	N	1	Dual NWR 100-Watt Transmitter (SRS)
B230	N	1	Dual NWR VHF 1-KW Transmitter (Energy-Onix)
B232	N	1	Dual NWR 100-Watt Transmitter (Energy-Onix)
B240	N	1	Dual NWR 1-KW Transmitter (CROWN)
B242	N	1	Dual NWR 300-Watt Transmitter (CROWN)
B244	N	1	Dual NWR 100-Watt Transmitter (CROWN)
B250	N	1	Dual NWR 1-KW Transmitter (Armstrong)
B252	N	1	Dual NWR 300-Watt Transmitter (Armstrong)
B254	N	1	Dual NWR 100-Watt Transmitter (Armstrong)
B342	N	1	NWR Warning Decoder/Field Strength Meter/ 7 Channel Receiver (Battery Replacement Only)
B343	N	1	NWR Specific Area Monitoring Encoder (WSAME)
B345	N	1	Remote Off-Air Monitoring System (ROAMS)
B430	N	1	NWR Interim Digital Console (Digital Recorders, Inc)
B431	N	1	NWR Interim Digital Console (Interalia Model MMU2632RAB NWR)
B432	N	1	NWR Interim Digital Console (Dalke Model DBS-2)
B440	N	3	NWR Console Replacement System (CRS) Processor (MP/FEP/VIP)
BASTA	U	4	RSOIS Base Station
BDDS	R	3	Base Station Distribution System
BDDS02	Q	3	Base Station Distribution System - Radar, Doppler
CCTV	F	1	Closed Circuit TV Display System

EQUIPMENT	PROGRAM CODE	REPORTING CODE	DESCRIPTION
CL	T	1	Ceiling Light
CMAN	X	1	Coastal Marine Automated Network - National Data Buoy Center (NDBC) Program
CMISC	C	1	Miscellaneous Communications Equipment Not Assigned a Code
CRSSA	N	4	CRS System Administration Reporting Code
DCC	H	1	Direct Connect Telephone Coupler (PMMI Model MM-110)
EMWIN	C	1	Emergency Manager's Weather Information Network System
EPG	F	1	Engine Generator Used for Emergency Power
F420	T	1	F420 Series Wind Systems With Readouts/ Re-transmitters
FAC	F	4	Incidental Facilities Work Performed by Field Electronics Staff Including a Contract Administration and Oversight
FMISC	T	1	Miscellaneous Wind Equipment Not Assigned A Code and Listed in EHB-1
FNP	H	1	Fischer & Porter Weighing Precipitation Gauge (Telemetered Only)
FRN	E	1	Frame Relay Network
H083	T	1	H083 Hygrothermometer Transmitter and Receiver
H555	T	2	Handar Meteorological Equipment (Model 555)
HGE	U	1	Electrolyser Hydrogen Generator
HMISC	H	1	Miscellaneous Hydrologic Equipment Listed in EHB-1
HVAC	F	4	WFO, Station or Office Heating and Air Conditioning System
LAN	E	1	Local Area Network (Does Not Include Workstations)
LARC	H	1	Limited Automatic Remote Collector (Handar Model 550A)
LBC	T	1	Laser Beam Ceilometer with Recorder

EQUIPMENT	PROGRAM CODE	REPORTING CODE	DESCRIPTION
LDAD	I	4	AWIPS Local Data Acquisition and Dissemination Server
LID	H	2	LARC Interface Device
M003	U	2	Upper Air Microcomputer
METXX	H	2	Sierra Misco Hydrologic Equipment
MINI	E	1	Mini-Computer Systems and Other Equipment Not Identified
MLOS	R	3	Microwave Line of Sight Link for the WSR-88D Radar
MSCF	R	3	NEXRAD Master System Control Function
MSCF02	Q	1	Radar, Doppler Master System Control Function
MWR	T	1	Marine DARDC Wind/Temperature System Using Radio
MWT	T	1	Marine DARDC Wind System Using Telephone
NWWS	C	1	NOAA Weather Wire Service Satellite Broadcast System
OFFIC	X	1	Miscellaneous Office Equipment, Copy Machines, Non-Telephone Intercoms, Tape Recorders, etc.
PBT	U	2	Pibal Timing System
PC	E	1	IBM PC or Equivalent and Associated Equipment (Includes Monitors, Printers, Modems, etc.)
PCSA	E	1	PC System Administration Reporting
PHUB	U	2	Wind Profiler Hub Equipment (ERL-Owned)
PROF	U	2	Wind Profiler (ERL-Owned)
PSOS	U	1	Profiler Surface Observing System (ERL-Owned)
PUP	R	3	Principal User Processor for the WSR-88D Radar
RAAC	R	4	WSR-88D Air Conditioner Unit, Incidental Facility Work Performed by ETs
RAAC02	Q	3	Radar, Doppler Air Conditioner Unit, Incidental Facility Work Performed by ETs
RAEG	R	4	WSR-88D Emergency Power Generator Subsystem, Incidental Facilities Work Performed by ETs

EQUIPMENT	PROGRAM CODE	REPORTING CODE	DESCRIPTION
RAEG02	Q	1	Radar, Doppler Emergency Power Generator Subsystem, Incidental Facilities Work Performed by ETs
RCVR	C	1	Radio Receiver, Communications
RDA	R	3	Radar Data Acquisition Subsystem of the WSR-88D
RDA02	Q	1	Radar Data Acquisition Subsystem of the Doppler Radar
RIDDS	R	1	Interface and Data Distribution System for the WSR-88D
RMDIS	X	1	Regional and Mesoscale Meteorology Advanced Meteorological Satellite Development and Interpretation System
RPG	R	3	Radar Product Generation Sub-System of the WSR-88D
RPG02	Q	3	Radar Product Generation Sub-System of the Doppler Radar
RPU	U	4	RSOIS Remote Processing Unit
RRCU	Q	3	Doppler Radar Remote Control Unit
RSOIS	U	3	Radiosonde Surface Observing Instrumentation System
RWS	U	4	RRS Workstation
RWS51	C	1	VOX Monitor Alarm System, NWR
SAFEN	X	1	Incidental Environmental and Safety Work Performed by Field Electronics Staff Including Contract Administration and Oversight
SEIS	X	1	Seismic Equipment Not Otherwise Identified
SOCAT	X	1	Snow Vehicle - All Types of Off-Road Vehicles (Snow Cat, Snowmobile, Snow Machine)
SPS	U	3	RRS Signal Processing System
SR	T	1	Indicator, Sunshine, Wind , Precipitation
TELCO	X	1	Site Telephone Equipment
TEST	X	1	General Code For All Site Test Equipment, includes Coordination/ and Administration for Calibration.

EQUIPMENT	PROGRAM CODE	REPORTING CODE	DESCRIPTION
TMISC	T	1	Miscellaneous Temperature and Humidity Equipment
TPS	R	3	Transition Power Subsystem of the WSR-88D
TPS02	Q	3	Transition Power Source for the Doppler Radar
TRAIN	X	1	Electronics Staff Training (used to report time expended on training activities)
TRANP	U	2	Transponder Ranging System Used in ART1 and ART2
TREPC	C	1	ALDE PACFAC Modem, Map Search
TRF	C	1	Transceiver, HF-SSB
TRS	U	3	RRS Telemetry Receiver System
TRX	C	1	All Other Transceivers Not Otherwise Listed
TVR	C	1	Television Receiver
UCP	R	3	WSR-88D, Unit Control Position
UHFRL	N	1	UHF Radio Link Used with NWR
UP2	U	2	Alaska Wind Profiler
UPS	F	1	Uninterruptible Power Supply
VCAM	X	2	Video Camera, NWS Office of Meteorology Special Project System
VEH	X	1	Maintenance of Government-Owned Vehicles Used by Electronics Staff (Excludes SOCAT)
WAN	E	1	Regional Wide Area Network Activities
WDGR	T	1	Gust Recorder
WKST	X	1	UNIX Workstation, Hewlett Packard, Sun (Includes SAC, GDP)
WL900	U	1	WL-9000 LORAN Meteorological Processing System
WR74C	D	1	Local Warning Radar WSR-74C (R110 and C-Band)
WSR02	Q	1	Systems Administration Reporting Code for Doppler Radar
WSENS	U	4	RSOIS Wind Sensor

EQUIPMENT	PROGRAM CODE	REPORTING CODE	DESCRIPTION
WSR88	R	1	Systems Administration Reporting Code for WSR-88D
XMR	N	1	Transmitter Under 100-Watts
XMRT	N	1	Transmitter 100-Watts or Over

APPENDIX D - ASOS MAINTENANCE DATA REPORTING REQUIREMENTS

Table of Contents: Page

1 General. This appendix specifies data reporting requirements unique to the Automated Surface Observing System (ASOS). It includes both maintenance and configuration management (CM) reporting guidelines.

1.1 When to Report. A WS Form A-26 for an ASOS subsystem or peripheral will be originated when:

a. Equipment failures occur.

b. Equipment undergoes routine maintenance (or maintenance flags are cleared).

c. Equipment is relocated.

d. Special activity or sampling occurs.

e. Equipment is activated, deactivated, or modified.

f. Maintenance related system administration is accomplished.

1.2 Contract Maintenance. The ASOS maintenance concept is based in part on contracted maintenance. The Electronic Systems Analyst (ESA) is the local office focal point for all maintenance events involving the maintenance contractor. All Field Staff activities associated with contract maintenance, including contract maintenance oversight will be documented in the EMRS.

1.3 On-Site Depot Level Maintenance. The ASOS maintenance concept includes on-site depot level maintenance accomplished and/or administered by an operational support facility. The ESA is the local office focal point for all maintenance events involving on-site depot level maintenance. All Field Staff activities associated with on-site depot level maintenance will be documented using EMRS, including coordination, collaboration, and/or contract maintenance oversight.

1.4 Operational Support Facility Maintenance. The ASOS Operational Monitoring Center, (AOMC), serves as the ASOS operational support facility, monitoring the ASOS Network and providing technical support to field sites. All events involving depot level maintenance administered by the AOMC will be documented in EMRS by the AOMC. All Field Staff activities associated with AOMC maintenance will be documented using EMRS, including contract maintenance oversight.

2 ASOS Maintenance and System Administration Reporting. ASOS maintenance and maintenance related system administration is documented in EMRS. One WS Form A-26 is typically initiated for each maintenance action performed. A single WS Form A-26 may be initiated on a bi-weekly basis to report all maintenance related system administration duties.

Instructions for Specific Fields - detailed procedures for specific fields found on the WS Form A-26 are listed below.

(1) Open Date - The Open Date/Time records when a maintenance event begins for ASOS. A maintenance event caused by a failure or data quality error is considered to begin when the AOMC is made aware of the problem. If the AOMC is not aware of the maintenance event, then the Electronics Staff determines when the problem began. Routine scheduled maintenance events are considered to begin when the Electronics Staff notifies the AOMC and begins work on the maintenance event.

(2) Response Priority - The Response Priority indicates the rank of importance of the problem. For ASOS: Priority 1 indicates an immediate response, Priority 3 indicates a low reaction response. The AOMC sets the priorities and response time (see NWSI 30-2111).

(3) Trouble Ticket Number - When applicable, the AOMC trouble ticket number corresponding to the maintenance event is reported on the WS Form A-26.

(4) AOMC-EMRS Autoload Process - If an equipment failure or data quality error occurs at an AOMC monitored site, the AOMC will open and close the trouble ticket using the AOMC monitoring and maintenance procedure. Closed trouble tickets are submitted to the automated AOMC-EMRS load process. At least one WS Form A-26 will be generated and loaded into EMRS. Use the auto-generated WS Form A-26 to report maintenance by verifying and/or modifying the auto-populated fields.

NOTE: The auto-generated fields of the WS Form A-26 can be changed (except for the document number field). It is advised not to change the trouble ticket number. The trouble ticket number is the primary identification of the maintenance event used by the AOMC and EMRS.

2.1 Designated Equipment Codes for ASOS. A WS Form A-26 is initiated when a maintenance event or maintenance related system administration activity occurs. Sixteen equipment codes have been defined for the ASOS. These equipment codes are listed in Table D-1.

Table D-1. Reportable Equipment Codes for ASOS.

EQUIPMENT TYPE	EQUIPMENT CODE
ASOS Acquisition Control Unit	AACU
ASOS External Communications	ACOMM
ASOS Data Collection Package	ADCP
ASOS Ground-to-Air Radio Subsystem	AGTA
ASOS Heated Tipping Bucket Rain Gauge	AHTB
ASOS Peripherals (OID, VDU, CVD, and Printer)	APER
ASOS Pressure Measuring Subsystem	APRES
ASOS Present Weather Subsystem	APWX
ASOS Single Cabinet Assembly	ASCA

EQUIPMENT TYPE	EQUIPMENT CODE
ASOS Cloud Measuring Subsystem	ASKY
ASOS System Administration and Routine System Inspection Reporting Code	ASOSP
ASOS Temperature and Dewpoint Measuring Subsystem	ATDP
ASOS Lightning Detection Subsystem	ATS
ASOS Visibility Subsystem	AVIS
ASOS Wind Subsystem	AWIND
ASOS All Weather Precipitation Accumulation Gauge (AWPAG) - Dual Gauge Configuration	AWPAG
ASOS Freezing Rain Subsystem	AZR

NOTE: Use EMRS Equipment Code "FAC" to report incidental facilities maintenance/activities performed on an ASOS.

NOTE: If a DCP or an ACU failure causes failure indications for multiple sensors, complete one WS Form A-26 using the equipment code ADCP or AACU. The failed sensors may be listed in either the description field (Block 5) or the comments field (Block 15).

2.2 Equipment Code Activation for ASOS. ASOS equipment codes are activated by the Weather Service Headquarters (WSH). As each ASOS subsystem is accepted by a representative of the Government, the appropriate equipment codes for the ASOS are activated in the EMRS. In addition, the Field Staff may be responsible for activating particular ASOS subsystems as directed in an official Hardware Modification Note or Software Installation Instruction Note. Follow these equipment specific instructions to activate ASOS equipment in EMRS. Prior to official activation the NWS Electronics Staff will report all pre-acceptance activities using the reportable equipment code "ASOSP" and the serial number "001".

2.3 Serial Number Locations and Assignments. In general, each ASOS subsystem identified by an EMRS equipment code has a unique serial number. The location or assignment of each subsystem serial number is described in Table D-2 below.

Table D-2. Location of ASOS Serial Numbers.

EQUIPMENT TYPE	LOCATION
Acquisition Control Unit (AACU)	The AACU serial number is located on a metal label centered on the inside of the main enclosure door.
External Communications (ACOMM)	Use serial number “001".
Data Collection Package (ADCP)	The ADCP serial number is located on a metal label centered on the underneath side of the main enclosure door.
Ground to Air Radio Subsystem (AGTA)	The AGTA serial number is located on a white label centered on the face of the GTA radio.
Heated Tipping Bucket Rain Gauge (AHTB)	The AHTB serial number is located on a metal label centered on the outside of the tipping bucket.
Peripherals (APER)	The APER serial number is “001".
Present Weather Subsystem (APRES)	The APRES serial number is “001".
Single Cabinet Assembly (ASCA)	The ASCA serial number is located on a metal label centered on the underneath side of the main enclosure door
Cloud Measuring Subsystem (ASKY)	The ASKY serial number is located on a metal label at the lower right corner of the sensor enclosure.
ASOS System Administration and Routine Inspection (ASOSP)	Use serial number “001".
Temperature and Dewpoint Measuring Subsystem (ATDP)	The ATDP serial number is located on the metal label centered on the outside of the enclosure door.
Lightening Detection Subsystem (ATS)	The ATS serial number is located on a metal label near the lower right corner of the back of the sensor.
Visibility Subsystem (AVIS)	The AVIS serial number is located on a metal label in the lower left corner on the outside of the main enclosure door.
Wind Subsystem (AWIND)	The AWIND serial number is located on the metal label in the lower left corner on the outside of the main enclosure door.
ASOS All Weather Precipitation Accumulation Gauge (AWPAG)	The AWPAG serial number is located outside the stainless steel sensor shell on a label next to the channel which contains the sensor wiring.

EQUIPMENT TYPE	LOCATION
Freezing Rain Subsystem (AZR)	The AZR serial number is located on the metal label centered on the side of sensor.

NOTE: If a Serial Number of "000A", "000B", or "000C"appears in the site inventory, the EMRS database has not been updated with the correct serial number for the piece of equipment. Enter the proper serial number in the WS Form A-26. The Data Entry System will ask, "Equip. Not found in Equip. Population Table. Do you want to correct? [Y/N]=>". Answer with a "N". The EMRS Analyst will be notified of the discrepancy and will update the inventory.

2.4 Remote Equipment Maintenance. When performing remote monitoring or other administrative work for a site, a group of sites, or equipment, use equipment code ASOSP. When reporting for multiple sites, complete one WS Form A-26 using the ESA/ET Station ID (HID) of the sites in the Station ID field (Block 6). Report remote monitoring and administrative work on a bi-weekly basis. Remote monitoring reported under ASOSP does not include the clearing of maintenance flags. Report the remote clearing of a maintenance flag as a corrective action.

2.5 Redundant Equipment Uniquely Identified in ASOS. Maintenance activity reporting associated with redundant equipment does not apply to the ASOS program.

2.6 System Administration. Use the Equipment Code "ASOSP", Type Maintenance code "Z", and Action Taken code "Z" to report maintenance related system administration. The codes presented in Table D-3 are used to describe the type of maintenance related system administration work performed.

Table D-3. ASOS System Administration Codes.

CODE	DESCRIPTION
ARCH	Archive, backup
HELP	Customer/user assistance, training, consultation
SYSMAN	File management, patches/maintenance releases, software upgrades, restore function, file and system reconfiguration/configurations, data management, shell scripts, security, enhancements, shutdowns, user accounts, system performance, and problem analysis/troubleshooting
MAINT	Functions and activities with contractor maintenance
NETCOM	All network issues and communication activities and tasks

NOTE:	Reporting maintenance related system administration duties does not preclude reports required as the result of normal maintenance activities (i.e. preventive, corrective, modifications, etc.).

3 Configuration Management (CM) Reporting. CM information related to scheduled routine maintenance, corrective maintenance, equipment management activities and engineering modification implementation is documented in EMRS by WS Form A-26. CM information is used to:

a. Provide program managers with an accurate record of site configurations.

b. Determine modification kit distribution priority for approved engineering changes.

c. Identify sites having implemented a particular modification.

3.1 WS Form A-26 Data. CM data, collected via EMRS, is used to update databases supporting the Configuration Management Information System (CMIS). The CMIS provides users with site specific hardware and software configuration reports, as well as information concerning equipment modification implementation. Contact the Weather Service Headquarters (WSH) Maintenance, Logistics and Acquisition Division, Configuration Branch, (W/OPS13) at (301) 713-1892, for more information or assistance regarding CMIS.

3.2 Categories of CM Reporting. CM Reporting requires additional data in the Parts Failure Information section of the WS Form A-2 when:

(1) Parts or equipment replacement associated with a failure occur.

(2) Parts or equipment replacement associated with scheduled routine maintenance occur.

(3) Parts or equipment replacement associated with a special activity or sampling (installation of test configurations, retrofits, or inspections) occur.

(4) Equipment is activated, deactivated, or modified.

3.3 Equipment Failure Requiring Parts Replacement. When ASOS equipment fails, the Field Staff must document the Lowest Replaceable Unit (LRU) that failed and order a replacement part. The part number, marked on the equipment, is used to cross-reference the Agency Stock Number (ASN) in Engineering Handbook 1 (EHB-1), for ordering replacement parts. The removal and replacement of the failed unit requires specific CM data. These requirements are shown below.

a. For each part that fails enter the correct Agency Stock Number and Serial Number of the failed part.

b. For each replacement part enter the correct Vendor Part Number and Serial Number of the replacement part.

NOTE: When replacing an entire subsystem or a part of the subsystem having a uniquely identified serial number, complete two separate WS Form A-26s. The first WS Form A-26 (Deactivation A-26) contains the serial number of the subsystem being removed. The second WS Form A-26 (Activation A-26) contains the serial number of the newly installed subsystem.

3.4 Modification/Software /Maintenance Note and Request for Change (RC) Implementation. In addition to the requirements outlined in paragraph 3.3, follow specific CM data reporting requirements outlined in each official instruction. The Electronics Staff will ensure that the modification number has been entered in the WS Form A-26 and that the date-of-action is completed. General reporting requirements are defined in the Table D-4 below.

Table D-4. Reporting Guidelines for Modifications.

Modification Type	TM Code	AT Code	Mod. No.
Hardware Mod	M (Modification)	M (Modify)	The Note#
Maintenance Note	E (Equip. Mgmt.)	M	M and the Note#
RC Implementation	E	M	The RC #
Other Mods	S (Special Acct)	M	None

The MOD number field on the A-26, must be completed for all modifications. When reporting Field Modification Kits (FMKs), which are not a part of an official NWS modification note, use the FMK number preceded by "FMK" on the A-26. When reporting Engineering Change Proposals (ECPs), which are not a part of an official modification note, use the ECP number preceded by "ECP" on the WS Form A-26. When reporting a modification that has no MOD number use the word "NONE". All time spent performing modifications is reported as miscellaneous time, in the Work Load Information area of the WS Form A-26.

3.5 Modification Reporting Autoload Process. The WSH is responsible for automatically placing a WS Form A-26 into the EMRS "Hold" area for all WSH directed engineering modifications. The Electronics Staff may report the Modification/Software /Maintenance Note or Request for Change (RC) Implementation using this automatically loaded WS Form A-26.

3.6 Installation of Test Configuration. When test configurations are fielded in baseline controlled systems, specific CM data are required. The installation and removal of configurations must be reported. Test configurations have unique identifications to distinguish them from approved configurations. Specific CM reporting guidance will be provided with each installation instruction.

NOTE: CM Data Reporting Verification - If maintenance personnel have doubts about CM reporting requirements, contact the WSH Maintenance, Logistics and Acquisition Division, at (301) 713-1824, or the WSH Configuration Branch, (W/OPS13) at (301) 713-1892.

APPENDIX E - WSR-88D MAINTENANCE DATA REPORTING REQUIREMENTS

Table of Contents: Page

1 General. This appendix specifies data reporting requirements unique to the Weather Surveillance Radar System (WSR-88D). It includes both maintenance and configuration management (CM) reporting guidelines.

1.1 When to Report. A WS Form A-26 for a WSR-88D subsystem will be originated when:

a. Equipment failures occur.

b. Equipment undergoes routine maintenance.

c. Equipment is relocated.

d. Special activity or sampling occurs.

e. Equipment is activated, deactivated, or modified.

f. Maintenance related system administration is accomplished.

1.2 Contract Maintenance. The WSR-88D maintenance concept is based in part on contracted maintenance. The Electronic Systems Analyst (ESA) is the local office focal point for all maintenance events involving the maintenance contractor. All Field Staff activities associated with contract maintenance, including contract maintenance oversight, will be documented in the EMRS.

1.3 On-Site Depot Level Maintenance. The WSR-88D maintenance concept includes on-site depot level maintenance accomplished and/or administered by the Radar Operations Center (ROC). The ESA is the local office focal point for all maintenance events involving on-site depot level maintenance. All Field Staff activities associated with on-site depot level maintenance will be documented using EMRS, including coordination, collaboration and/or contract maintenance oversight.

1.4 Operational Support Facility Maintenance. The ROC serves as the WSR-88D operational support facility monitoring the WSR-88D Network and providing technical support to field sites. All events involving depot level maintenance accomplished and/or administered by the ROC will be documented in EMRS by the ROC. All Field Staff activities associated with ROC maintenance will be documented by the Field Staff using EMRS, including contract maintenance oversight.

2 WSR-88D Maintenance and System Administration Reporting. WSR-88D maintenance and maintenance related system administration activities are documented in EMRS. One WS Form A-26 is typically initiated for each maintenance action performed. A single WS Form A-26 may be initiated on a bi-weekly basis to report all maintenance related system administration activities.

2.1 Designated Equipment Codes for WSR-88D. A WS Form A-26 is initiated when a maintenance event or maintenance related system administration activity occurs. Ten equipment codes have been defined for the WSR-88D. These equipment codes are listed in Table E-1.

Table E-1. WSR-88D Equipment Codes.

EQUIPMENT TYPE	EQUIPMENT CODE
Radar Data Acquisition Subsystem	RDA
Radar Product Generation Subsystem	RPG
Principal User Processor Subsystem	PUP
Base Data Distribution Service	BDDS
Microwave Line of Sight Subsystem	MLOS
Manual System Control Function Subsystem	MSCF
Emergency Power Generator Subsystem	RAEG
Air Conditioning Unit Subsystem (RDA)	RAAC
Transition Power Source	TPS
WSR-88D Systems Administration Reporting Code	WSR88

NOTE: Use EMRS Equipment Code "FAC" to report incidental facilities maintenance/activities performed on a WSR-88D Site.

2.2 Equipment Code Activation for WSR-88D. WSR-88D equipment codes are activated by the Weather Service Headquarters (WSH). As new equipment is added to the WSR-88D configuration baseline, the appropriate equipment codes are activated in the EMRS. In addition, the Field Staff may be responsible for activating particular WSR-88D subsystems as directed in an official Hardware Modification Note or Software Installation Instruction Note. Follow these equipment specific instructions to activate WSR-88D equipment in EMRS. Prior to official activation the NWS Electronics Staff will report all pre-acceptance activities using the reportable equipment code "WSR88" and the serial number "001".

2.3 Serial Number Locations and Assignments. In general, each WSR-88D subsystem identified by an EMRS equipment code has a unique serial number. The location or assignment of each subsystem serial number is described in Table E-2.

Table E-2. Location of WSR-88D Serial Numbers.

EQUIPMENT TYPE	LOCATION
Radar Data Acquisition (RDA)	The RDA serial number is located on a metal label on the front, bottom panel of the right rack (UD 5).
Radar Product Generation (RPG)	The RPG serial number is located on a metal label on the front, bottom panel of the RPG cabinet (UD 70).
Principal User Processor Subsystem (PUP)	The PUP serial number is located on a metal label on the front, bottom panel of the right rack (UD 41)
Base Data Distribution Service (BDDS)	The BDDS serial number is located on a metal label on the back of the rack (UD 72).
Manual System Control Function Subsystem (MSCF)	The MSCF serial number is located on a sticker on the rear of the CPU unit in the upper left corner. Some units also have a sticker on the left side of the CPU chassis.
Microwave Line of Site (MLOS)	The MLOS serial number is located on the metal label on the front door, upper right corner of the MLOS transceiver rack (UD 19 or UD 39).
Emergency Power Generator Subsystem (RAEG)	The RAEG serial number is located on the left side of the front panel of Onan generators or on the right side of the control panel for Kohler generators (UD 10MG1).
Air Conditioning Unit Subsystem (RAAC)	Use a serial number of “001”.
Transition Power Source (TPS)	The TPS serial numbers are located on the exterior upper left side of the unit (UD 62).
WSR-88D Systems Administration Reporting Code (WSR88)	Use a serial number of “001".

NOTE: If a Serial Number of "000A", "000B", or "000C"appears in the site inventory, the EMRS database has not been updated with the correct serial number for the piece of equipment. Enter the proper serial number in the WS Form A-26. The Data Entry System will say, "Equip. Not found in Equip. Population Table. Do you want to correct? [Y/N]=>". Answer with a "N". The EMRS Analyst will be notified of the discrepancy and will update the inventory.

2.4 Remote Equipment Maintenance. In some cases, the Radar Data Acquisition Subsystem (RDA) is located at a remote site. When reporting maintenance activity on equipment at a remote site, use the Station Identifier (SID) of the remote RDA site.

2.5 Redundant Equipment Uniquely Identified in WSR-88D. EMRS reporting procedures for redundant RDA systems require the serial number of the primary RDA be used when maintenance is performed on the primary channel. The Primary RDA channel consists of the following equipment.

a. Transmitter (UD3).

b. Receiver (UD4).

c. Data Processor (UD5).

d. Electrical Equipment Shelter.

e. Steel Tower Structure.

f. Antenna/Pedestal Assembly.

Report all maintenance performed on the equipment listed below using the serial number of the Secondary RDA channel.

(1) Transmitter (UD103).

(2) Receiver (UD104).

(3) Data Processor (UD105).

2.6 System Administration. Use the Equipment Code "WSR88", Type Maintenance code "Z", and Action Taken code "Z", to report maintenance related system administration. The codes presented in Table E-3 are used to describe the type of maintenance related system administration work performed.

Table E-3. WSR88 System Administration Codes.

CODE	DESCRIPTION
ARCH	Archive, backup
HELP	Customer/user assistance, training, consultation
SYSMAN	File management, patches/maintenance releases, software upgrades, restore function, file and system reconfiguration/configurations, data management, shell scripts, security, enhancements, shutdowns, user accounts, system performance, and problem analysis/troubleshooting
MAINT	Functions and activities with contractor maintenance
NETCOM	All network issues and communication activities and tasks

NOTE: Reporting maintenance related system administration duties does not preclude reports required as the result of normal maintenance activities (i.e. preventive, corrective, modifications, etc.).

3 Configuration Management (CM) Reporting. CM information related to scheduled routine maintenance, corrective maintenance, equipment management activities and engineering modification implementation is documented in EMRS by WS Form A-26. CM information is used to:

a. Provide program managers with an accurate record of site configurations.

b. Determine modification kit site distribution priority for approved engineering changes.

c. Identify sites having implemented a particular modification.

3.1 WS Form A-26 Data. CM data, collected via EMRS, is used to update databases supporting the Configuration Management Information System (CMIS). The CMIS provides users with site specific hardware and software configuration reports, as well as information concerning equipment modification implementation. Contact the Weather Service Headquarters (WSH) Maintenance, Logistics and Acquisition Division, Configuration Branch, (W/OPS13) at (301) 713-1892, for information or assistance regarding CMIS.

3.2 Categories of CM Reporting. CM Reporting requires additional data in the Parts Failure Information section of the WS Form A-2 when:

(1) Parts or equipment replacement associated with a failure occur.

(2) Parts or equipment replacement associated with scheduled routine maintenance occur.

(3) Parts or equipment replacement associated with a special activity or sampling

(installation of test configurations, retrofits, or inspections) occur.

(4) Equipment is activated, deactivated, or modified.

3.3 Equipment Failure Requiring Parts Replacement. When WSR-88D equipment fails, the Field Staff must document the Lowest Replaceable Unit (LRU) that failed and order a replacement part. The part number marked on the equipment is used to cross-reference the Agency Stock Number (ASN) in Engineering Handbook 1 (EHB-1) for ordering replacement parts. The removal and replacement of the failed unit requires specific CM data. These requirements are shown below.

a. For each part that fails enter the correct Agency Stock Number and Serial Number of the failed part.

b. For each replacement part enter the correct Vendor Part Number and Serial Number of the replacement part.

NOTE: When replacing an entire subsystem or a part of the subsystem having a uniquely identified serial number, complete two separate WS Form A-26s. The first WS Form A-26 (Deactivation A-26) contains the serial number of the subsystem being removed. The second WS Form A-26 (Activation A-26) contains the serial number of the newly installed subsystem.

3.4 Modification/Software /Maintenance Note and Request for Change (RC) Implementation. In addition to the requirements outlined in paragraph 3.3, follow specific CM data reporting requirements outlined in each official instruction note. Ensure that the modification number has been entered in the WS Form A-26 and that the date-of-action is completed. General reporting requirements are defined in Table E-4 below.

Table E-4. Reporting Guidelines for Modifications.

MODIFICATION TYPE	TM CODE	AT CODE	MOD. NO.
Hardware Mod	M (Modification)	M (Modify)	The Note#
Software Mod	M	M	S and the Note#
Maintenance Note	E (Equip. Mgmt.)	M	M and the Note#
RC Implementation	E	M	The RC #
Other Mods	S (Special Acct)	M	None

The MOD number field on the A-26, must be completed for all modifications. When reporting Field Modification Kits (FMKs), which are not a part of an official NWS modification note, use the FMK

number preceded by "FMK" on the A-26. When reporting Engineering Change Proposals (ECPs), which are not a part of an official modification note, use the ECP number preceded by "ECP" on the WS Form A-26. When reporting a modification that has no MOD number, use the word "NONE". All time spent performing modifications is reported as Miscellaneous time in the Work Load Information area of the WS Form A-26.

3.5 Modification Reporting Autoload Process. The WSH is responsible for automatically placing a WS Form A-26 into the EMRS "Hold" area for all WSH directed engineering modifications. The Electronics Staff may report the Modification/Software /Maintenance Note or Request for Change (RC) Implementation using this automatically loaded WS Form A-26.

3.6 Installation of Test Configuration. When test configurations are fielded in baseline controlled systems, specific CM data are required. The installation and removal of configurations must be reported. Test configurations have unique identifications to distinguish them from approved configurations. Specific CM reporting guidance will be provided with each installation instruction.

NOTE: CM Data Reporting Verification - If maintenance personnel have doubts about CM reporting requirements, contact the WSH Maintenance, Logistics and Acquisition Division, at (301) 713-1824, or the WSH Configuration Branch, (W/OPS13) at (301) 713-1892.

APPENDIX F - AWIPS MAINTENANCE DATA REPORTING REQUIREMENTS

Table of Contents: Page

1 General. This appendix specifies the data reporting requirements unique to the Advanced Weather Interactive Processing System (AWIPS). It includes both the maintenance and configuration management (CM) reporting guidelines.

1.1 When to Report. A WS Form A-26 for an AWIPS subsystem will be originated when:

a. Equipment failures occur.

b. Equipment undergoes routine maintenance.

c. Equipment is relocated.

d. Special activity or sampling occurs.

e. Equipment is activated, deactivated, or modified.

f. Maintenance related system administration is accomplished.

1.2 Contract Maintenance. The AWIPS maintenance concept is based in part on contracted maintenance. The Electronic Systems Analyst (ESA) is the local office focal point for all maintenance events involving the maintenance contractor. All Field Staff activities associated with contract maintenance including contract maintenance oversight will be documented through the EMRS.

1.3 On-Site Depot Level Maintenance. The AWIPS maintenance concept includes on-site depot level maintenance accomplished by the maintenance contractor. The ESA is the local office focal point for all maintenance events involving on-site depot level maintenance. The AWIPS Network Control Facility (NCF) will be notified of any faults or failures to AWIPS. The problem will be diagnosed by the NCF and if required the on-site maintenance coordinated with the ESA. All Field Staff activities associated with on-site depot level maintenance will be documented using EMRS, including coordination, collaboration, and/or contract maintenance oversight.

1.4 Operational Support Facility Maintenance. The NCF serves as the AWIPS operational support center, monitoring the AWIPS Communication Network (ACN) and providing technical support to field sites. All events involving NCF maintenance accomplished by the NCF or non-NWS staff acting in support of a NCF directed maintenance event, are documented by the NCF. All Field Staff activities associated with NCF maintenance will be documented by the Field Staff using EMRS including contract maintenance oversight.

2 AWIPS Maintenance and System Administration Reporting. AWIPS maintenance and maintenance related system administration activities are documented in EMRS. One WS Form A-26 is typically initiated for each maintenance action performed. A single WS Form A-26 may be initiated on a bi-weekly basis to report all maintenance related system administration duties.

2.1 Designated Equipment Codes for AWIPS. A WS Form A-26 is initiated when a maintenance event or maintenance related system administration activity occurs. Four equipment codes have been defined for the AWIPS in Table F-1.

NOTE: The EMRS Equipment Code "AWLNX" was created for LINUX based workstations installed within the AWIPS baseline. When a WSH Modification Note authorizes sites to install LINUX based workstations within the AWIPS baseline, these workstations are activated in EMRS using the code "AWLNX" (examples: LX1, LX2, CP1, CP2, PX1, PX2, AX). Sites that have been given regional or other non-WSH directives to install LINUX based workstations should activate these workstations in EMRS using the "WKST" equipment code (examples: WES, workstation, WES archive workstation).

Table F-1. AWIPS Equipment Codes.

EQUIPMENT TYPE	EQUIPMENT CODE
AWIPS Local Data Acquisition and Dissemination Server	LDAD
AWIPS Linux Workstations and Servers	AWLNX
AWIPS Remote Display	ARD
AWIPS System Administration Reporting Code	AWIPS

NOTE: Use EMRS Equipment Code "FAC" to report incidental facilities maintenance/activities performed on AWIPS equipment.

2.2 Equipment Code Activation for AWIPS. AWIPS equipment codes are activated in EMRS by the Field Staff. Submit one WS Form A-26 to report all activities associated with the site preparation, installation and checkout of the equipment, system or subsystem. In addition, the Field Staff may be responsible for activating particular AWIPS equipment as directed in an official Modification Note, Maintenance Note, Software Note or Request for Change Implementation Memorandum. Follow these equipment specific instructions included in the equipment change documentation to activate AWIPS equipment in EMRS. Prior to official activation the NWS Electronics Staff will report all pre-acceptance activities using the reportable equipment code "AWIPS" and the serial number "001".

2.3 Serial Number Locations and Assignments. In general, all AWIPS subsystems are grouped under one EMRS equipment code. However, selected subsystems are uniquely identified by a separate EMRS equipment code. The location or assignment of each subsystem serial number is described in Table F-2.

Table F-2. Location of AWIPS Serial Numbers.

EQUIPMENT TYPE	LOCATION
AWIPS System Admin Code (AWIPS)	All sites should activate the AWIPS equipment code with the generic serial number “001".
Local Data Acquisition and Dissemination Server (LDAD)	All sites should activate the AWIPS equipment code with the generic serial number “001".
AWIPS Linux Workstations (AWLNX)	The AWLNX serial number is located on the rear panel of the processor case.
AWIPS Remote Display (ARD)	The ARD serial number is located on the rear of the processor case.

NOTE: If a Serial Number of “000A”, “000B”, or “000C”appears in the site inventory, the EMRS database has not been updated with the correct serial number for the piece of equipment. Enter the proper serial number in the WS Form A-26. The Data Entry S ystem will say, “Equip. Not found in Equip. Population Table. Do you want to correct? [Y/N]=>”. Answer with a “N”. The EMRS Analyst will be notified of the discrepancy and will update the inventory.

2.4 Remote Equipment Maintenance. In most cases, the AWIPS Remote Display (ARD) is located at remote sites. When reporting maintenance activity on equipment at remote sites, use the Station Identifier (SID) of the remote ARD.

2.5 Redundant Equipment Uniquely Identified in AWIPS. Maintenance activity reporting associated with redundant equipment does not apply to the AWIPS program.

2.6 System Administration. Use the Equipment code “AWIPS”, Type Maintenance code “Z”, and Action Taken code “Z” to report maintenance related system administration. The codes presented in Table F-3 are used to describe the type of maintenance related system administration work performed.

Table F-3. AWIPS System Administration Codes.

CODE	DESCRIPTION
ARCH	Archive, backup
HELP	Customer/user assistance, training, consultation
SYSMAN	File management, patches/maintenance releases, software upgrades, restore function, file and system reconfiguration/configurations, data management, shell scripts, security, enhancements, shutdowns, user accounts, system performance, and problem analysis/troubleshooting
MAINT	Functions and activities with contractor maintenance
NETCOM	All network issues and communication activities and tasks

NOTE: Reporting maintenance related system administration duties does not preclude reports required as the result of normal maintenance activities (i.e. preventive, corrective, modifications, etc.).

3 Configuration Management (CM) Reporting. CM information related to scheduled routine maintenance, corrective maintenance, and equipment management activities is documented by the AWIPS maintenance contractor. CM information related to activities performed by the Field Staff is documented in EMRS using the WS Form A-26. CM information is used to:

a. Provide program managers with an accurate record of site configurations.

b. Determine modification kit distribution priority for approved engineering changes.

c. Identify sites having implemented a particular modification.

3.1 WS Form A-26 Data. CM data collected via EMRS is used to update databases supporting the Configuration Management Information System (CMIS). The CMIS provides users with site specific hardware and software configuration reports, as well as information concerning equipment modification implementation. Contact the Weather Service Headquarters (WSH) Maintenance, Logistics and Acquisition Division, Configuration Branch, (W/OPS13) at (301) 713-1892, for information or assistance regarding CMIS.

3.2 Categories of CM Reporting. CM Reporting requires additional data in the Parts Failure Information section of the WS Form A-2 when:

a. Parts or equipment replacement associated with a failure occur.

b. Parts or equipment replacement associated with scheduled routine maintenance occur.

c. Parts or equipment replacement associated with a special activity or sampling (installation of test configurations, retrofits, or inspections) occur.

d. An equipment is activated, deactivated, or modified.

3.3 Equipment Failure Requiring Parts Replacement. When AWIPS equipment fails, the NCF must be notified. The NCF may determine that the unit must be repaired by the maintenance contractor, returned to the NRC, or repaired by the Field Staff. When the removal and replacement of the failed unit is performed by the Field Staff, specific CM data reporting is required. These requirements are shown below.

a. For each part that fails enter the correct Agency Stock Number and Serial Number of the failed part.

b. For each replacement part enter the correct Vendor Part Number and Serial Number of the replacement part.

NOTE: When replacing an entire subsystem or a part of the subsystem having a uniquely identified serial number, complete two separate WS Form A-26s. The first WS Form A-26 (Deactivation A-26) contains the serial number of the subsystem being removed. The second WS Form A-26 (Activation A-26) contains the serial number of the newly installed subsystem.

3.4 Modification/Software /Maintenance Note and Request for Change (RC) Implementation. In addition to the requirements outlined in paragraph 3.3, follow specific CM data reporting requirements outlined in each official instruction note. Ensure that the modification number has been entered in the WS Form A-26 and that the date-of-action is completed. General reporting requirements are defined in Table F-4 below.

Table F-4. Reporting Guidelines for Modifications

MODIFICATION TYPE	TM CODE	AT CODE	MOD. NO.
Hardware Mod	M (Modification)	M (Modify)	The Note#
Software Mod	M	M	S and the Mod#
AWIPS Application Software Note	M	M	AS and the Note#
AWIPS Software Patch Mod	M	M	SP and the Mod#
AWIPS Contractor Interface Note	M	M	CI and the Note#
AWIPS System Administration Note	M	M	SA and the Note#

MODIFICATION TYPE	TM CODE	AT CODE	MOD. NO.
AWIPS Information Note	E (Equip. Mgmt.)	M	I and the Note#
AWIPS System Security Note	M	M	SS and the Note#
Maintenance Note	E	M	M and the Note#
RC Implementation	E	M	The RC #
Other Mods	S (Special Acct.)	M	None

The MOD number field on the WS Form A-26, must be completed for all modifications. When reporting Field Modification Kits (FMKs), which are not a part of an official NWS modification note, use the FMK number preceded by "FMK" on the WS Form A-26. When reporting Engineering Change Proposals (ECPs), which are not a part of an official modification note, use the ECP number preceded by "ECP" on the WS Form A-26. When reporting a modification that has no MOD number use the word "NONE". All time spent performing modifications is reported as miscellaneous time, in the Work Load Information area of the WS Form A-26.

3.5 Modification Reporting Autoload Process. The WSH is responsible for automatically placing a WS Form A-26 into the EMRS "Hold" area for all WSH directed engineering modifications. The Electronics Staff may report the Modification/Software /Maintenance Note or Request for Change (RC) Implementation using this automatically loaded WS Form A-26.

3.6 Installation of Test Configuration. When test configurations are fielded in baseline controlled AWIPS, specific CM data are required. The installation and removal of configurations must be reported. Test configurations have unique identifications to distinguish them from approved configurations. Specific CM reporting guidance will be provided with each installation instruction.

NOTE: CM Data Reporting Verification - If maintenance personnel have doubts about CM reporting requirements, contact the WSH Maintenance, Logistics and Acquisition Division, at (301) 713-1824, or the WSH Configuration Branch, (W/OPS13) at (301) 713-1892.

APPENDIX G - NOAA WEATHER RADIO (NWR) CONSOLE REPLACEMENT SYSTEM (CRS)MAINTENANCE DATA REPORTING REQUIREMENTS

Table of Contents: Page

1 General. This appendix specifies data reporting requirements unique to the NOAA Weather Radio (NWR)/Console Replacement System (CRS) program. It includes both maintenance and configuration management (CM) reporting guidelines.

1.1 When To Report. A WS Form A-26 for a NWR/CRS subsystem will be originated when:

a. Equipment failures occur.

b. Equipment undergoes routine maintenance.

c. Equipment is relocated.

d. Special activity or sampling occurs.

e. Equipment is activated, deactivated, or modified.

f. Maintenance related system administration is accomplished.

1.2 Contract Maintenance. The NWR/CRS maintenance concept is based in part on contracted maintenance. The Electronic Systems Analyst (ESA) is the local office focal point for all maintenance events involving the maintenance contractor. All Field Staff activities associated with contract maintenance, including contract maintenance oversight, will be documented through the EMRS.

1.3 On-Site Depot Level Maintenance. The NWR/CRS maintenance concept does not include on-site depot level maintenance.

1.4 Operational Support Facility Maintenance. The NWR/CRS maintenance concept does not include a centralized operational support facility.

2 NWR/CRS Maintenance and System Administration Reporting. NWR/CRS equipment maintenance and maintenance related system administration activities are documented in EMRS. One WS Form A-26 is typically initiated for each maintenance action performed. A single WS Form A-26 may be initiated on a bi-weekly basis to report all maintenance related system administration duties.

2.1 Designated Equipment Codes for NWR/CRS. A WS Form A-26 is initiated when a maintenance event or maintenance related system administration activity occurs. Nineteen equipment codes have been defined for the NWR/CRS program. These equipment codes are listed in Table G-1.

Table G-1. NWR/CRS Equipment Codes.

EQUIPMENT TYPE	EQUIPMENT CODE
NWR Console Replacement System Processor (MP, FEP, VIP)	B440
CRS System Administration	CRSSA
Remote Off-Air Monitoring System (ROAMS) Upgrade	B345
NWR Specific Area Monitoring Encoder (SAME)	B343
NWR Warning Decoder/Field Strength Meter	B342
Dual NWR 100-Watt Transmitter (Energy-Onix)	B232
Dual NWS VHF 1KW Transmitter (Energy-Onix)	B230
Dual NWR 100-Watt Transmitter (SRS)	B224
Dual NWR 1 KW Transmitter (SRS)	B222
NWR 1.25 KW Transmitter (SRS)	B220
Dual NWR 1KW Transmitter (Crown)	B240
Dual NWR 300-Watt Transmitter (Crown)	B242
Dual NWR 100-Watt Transmitter (Crown)	B244
Dual NWR 1KW Transmitter (Armstrong)	B250
Dual NWR 300-Watt Transmitter (Armstrong)	B252
Dual NWR 100-Watt Transmitter (Armstrong)	B254
Transmitter, Under 100 watts	XMR
Transmitter, 100 watts or more	XMRT
UHF Radio Link	UHFRL

NOTE: Use EMRS Equipment Code "FAC" to report incidental facilities maintenance/activities performed on a NWR Transmitter Site.

2.2 Equipment Code Activation for NWR/CRS. NWR/CRS equipment codes are activated in EMRS by the Field Staff. Submit one WS Form A-26 to report all activities associated with the site preparation, installation and checkout of the equipment, system or subsystem. In addition, the Field Staff may be responsible for activating particular NWR/CRS equipment as directed in an official Modification Note, Maintenance Note, Software Note or Request for Change Implementation

Memorandum. Follow these equipment specific instructions included in the equipment change documentation to activate NWR/CRS equipment in EMRS. Prior to official activation the NWS Electronics Staff will report all pre-acceptance activities using the reportable equipment code "CRSSA" and the serial number "001".

NOTE: When replacing an entire subsystem or a part of the subsystem having a serial number uniquely identified in EMRS, complete two separate WS Form A-26s. The "Deactivation" WS Form A-26 should have the serial number of the subsystem being removed. The "Activation" WS Form A-26 should have the serial number of the new subsystem or equipment.

2.3 Serial Number Locations and Assignments. In general, each NWR/CRS subsystem identified by an EMRS equipment code has a unique serial number. The location or assignment of each subsystem serial number is described in Table G-2 below. A description of each NWR processor and how to report maintenance for each subsystem is also included.

Table G-2. Location of CRS Serial Numbers.

EQUIPMENT TYPE	LOCATION
Main Processor (B440)	Located on a metal label on the back, lower right hand corner of the 0MP (or 5MP). All maintenance performed to the Operators Unit (Monitor, Audio Control Panel, Keyboard, Mouse, Headset, etc.) will be reported using the equipment code B440 and the 0MP (or 5MP) serial number.
Front End Processor (B440)	Located on a metal label on the back, lower right hand corner, of the FEP. All maintenance performed to the System Maintenance Unit (Monitor, Keyboard, Printer, etc.) will be reported using equipment code B440 and the 1FEP serial number. All maintenance to LAN Bridge, ROAMS Modem, LAN servers, Audio Switch Assembly, etc., will be reported using equipment code B440 and the 1FEP serial number.
Front End Processor (B440)	Located on a metal label on the back, lower right hand corner of the 2FEP.
Front End Processor (B440)	Located on a metal label on the back, lower right hand corner of the 3FEP.
Back-up Processor (B440)	Located on a metal label on the back, lower right hand corner of the 4BKUP.
Voice-Improvement Processor (B440)	Located on a metal label on the back or side of the VIP.
CRS System	CRS system administration reporting code (CRSSA) will have a Serial Number of "001".

NOTE: If a Serial Number of "000A", "000B", or "000C"appears in the site inventory, the EMRS database has not been updated with the correct serial number for the piece of equipment. Enter the proper serial number in the WS Form A-26. The Data Entry System will say, "Equip. Not found in Equip. Population Table. Do you want to correct [Y/N]=>". Answer with a "N". The EMRS Analyst will be notified of the discrepancy and will update the inventory. In most cases, NWR transmitters are located at remote sites. When reporting maintenance activity on equipment at remote sites, use the Station Identifier (SID) of the remote transmitter site.

2.4 Remote Equipment Maintenance. In most cases, NWR Transmitters are located at remote sites. When reporting maintenance activity on equipment at a remote site, use the SID of the remote transmitter site.

2.5 System Administration. Use the equipment code "CRSSA", Type Maintenance code "Z", and Action Taken code "Z", to report maintenance related system administration. The codes presented in Table G-3 are used to describe the type of maintenance related system administration work performed.

Table G-3. System Administration Codes.

CODE	DESCRIPTION
ARCH	Archive, backup.
HELP	Customer/user assistance, training, consultation.
SYSMAN	File management, patch, restore function, file and system reconfiguration/ configurations, data management, shell scripts, security, enhancements, shutdowns, user accounts, system performance, problem analysis.
MAINT	Functions and activities with contract maintenance.
NETCOM	All network issues and communication activities and tasks.

NOTE: Reporting maintenance related system administration duties does not preclude reports required as the result of normal maintenance activities (i.e. preventive, corrective, modifications, etc.).

2.6 System Administration. Use the Equipment Code "CRS", Type Maintenance code "Z", and Action Taken code "Z", to report maintenance related system administration. The codes presented in Table G-3 are used to describe the type of maintenance related system administration work performed.

3 Configuration Management (CM) Reporting. CM information related to scheduled routine maintenance, corrective maintenance, equipment management activities and engineering modification implementation is documented in EMRS by WS Form A-26. CM information is used to:

a. Provide program managers with an accurate record of site configurations.

b. Determine modification kit site distribution priority for approved engineering changes.

c. Identify sites which have implemented a particular modification.

3.1 WS Form A-26 Data. CM data, collected via EMRS, is used to update databases supporting the Configuration Management Information System (CMIS). The CMIS provides users with site specific hardware and software configuration reports, as well as information concerning equipment modification implementation. Contact the Weather Service Headquarters (WSH) Maintenance, Logistics and Acquisition Division, Configuration Branch, (W/OPS13) at (301) 713-1892, for information or assistance regarding CMIS.

3.2 Categories of CM Reporting. CM Reporting requires additional data in the Parts Failure Information section of the WS Form A-2 when:

(1) Parts or equipment replacement associated with a failure occur.

(2) Parts or equipment replacement associated with scheduled routine maintenance occur.

(3) Parts or equipment replacement associated with a special activity or sampling (installation of test configurations, retrofits, or inspections) occur.

(4) An equipment is activated, deactivated, or modified.

3.3 Equipment Failure Requiring Parts Replacement. When NWR/CRS equipment fails, the Field Staff must document the Lowest Replaceable Unit (LRU) that failed and order a replacement part. The part number marked on the equipment is used to cross-reference the Agency Stock Number (ASN) in Engineering Handbook 1 (EHB-1) for ordering replacement parts. The removal and replacement of the failed unit requires specific CM data reporting. These requirements are shown below.

a. For each part that fails enter the correct Agency Stock Number and Serial Number of the failed part.

b. For each replacement part enter the correct Vendor Part Number and Serial Number of the replacement part.

3.4 Modification/Software /Maintenance Note and Request for Change (RC) Implementation. In addition to the requirements outlined in paragraph 3.3, follow specific CM data reporting requirements outlined in each official instruction note. Ensure that the modification number has been entered in the

WS Form A-26 and that the date-of-action is completed. General reporting requirements are defined in the Table G-4 below.

Table G-4. Reporting Guidelines for Modifications.

MODIFICATION TYPE	TM CODE	AT CODE	MOD. NO.
Hardware Mod	M (Modification)	M (Modify)	The Note#
Software Mod	M	M	S and the Note#
Maintenance Note	E (Equip. Mgmt.)	M	M and the Note#
RC Implementation	E	M	The RC #
Other Mods	S (Special Acct)	M	None

The MOD number field on the A-26, must be completed for all modifications. When reporting Field Modification Kits (FMKs), which are not a part of an official NWS modification note, use the FMK number preceded by "FMK" on the A-26. When reporting Engineering Change Proposals (ECPs), which are not a part of an official modification note, use the ECP number preceded by "ECP" on the WS Form A-26. When reporting a modification that has no MOD number use the word "NONE". All time spent performing modifications is reported as miscellaneous time, in the Work Load Information area of the WS Form A-26.

3.5 Modification Reporting Autoload Process. The WSH is responsible for automatically placing a WS Form A-26 into the EMRS "Hold" area for all WSH directed engineering modifications. The Electronics Staff may report the Modification/Software /Maintenance Note or Request for Change (RC) Implementation using this automatically loaded WS Form A-26.

3.6 Installation of Test Configuration. When test configurations are fielded in baseline controlled RRS/Upper Air systems, specific CM data are required. The installation and removal of configurations must be reported. Test configurations have unique identifications to distinguish them from approved configurations. Specific CM reporting guidance will be provided with each installation instruction.

NOTE: CM Data Reporting Verification - If maintenance personnel have doubts about CM reporting requirements, contact the WSH Maintenance, Logistics and Acquisition Division, at (301) 713-1824, or the WSH Configuration Branch, (W/OPS13) at (301) 713-1892.

APPENDIX H - RADIOSONDE REPLACEMENT SYSTEM (RRS)/UPPER AIR MAINTENANCE DATA REPORTING REQUIREMENTS

Table of Contents: Page

1 General. This appendix specifies data reporting requirements unique to the Radiosonde Replacement System (RRS)/Upper Air program. It includes both maintenance and configuration management (CM) reporting guidelines.

1.1 When to Report. A WS Form A-26 for a RRS/Upper Air subsystem will be originated when:

a. Equipment failures occur.

b. Equipment undergoes routine maintenance.

c. Equipment is relocated.

d. Special activity or sampling occurs.

e. Equipment is activated, deactivated, or modified.

f. Maintenance related system administration is accomplished.

1.2 Contract Maintenance. The RRS/Upper Air maintenance concept is based in part on contracted maintenance. The Electronic Systems Analyst (ESA) is the local office focal point for all maintenance events involving the maintenance contractor. All Field Staff activities associated with contract maintenance, including contract maintenance oversight will be documented through the EMRS.

1.3 On-Site Depot Level Maintenance. The RRS/Upper Air maintenance concept includes on-site depot level maintenance. The ESA is the local office focal point for all maintenance events involving on-site depot level maintenance. All Field Staff activities associated with on-site depot level maintenance will be documented using EMRS, including coordination, collaboration, and/or contract maintenance oversight.

1.4 Operational Support Facility Maintenance. The RRS/Upper Air maintenance concept does not include a centralized operational support facility.

2 RRS/Upper Air Maintenance and System Administration Reporting. RRS/Upper Air maintenance and maintenance related system administration is documented in EMRS. One WS Form A-26 is typically initiated for each maintenance action performed. A single WS Form A-26 may be initiated on a bi-weekly basis to report all maintenance related system administration duties.

2.1 Designated Equipment Codes for RRS/Upper Air. The RRS/Upper Air program is comprised of a software-driven, stand-alone systems that detect, processes, and distributes weather information. The RRS/Upper Air is divided into two equipment code groups:

a. Equipment unique to the RRS.

b. Other equipment associated with the Upper Air program.

A WS Form A-26 is initiated when a maintenance event or maintenance related system administration activity occurs. Seventeen equipment codes have been defined for the RRS/Upper Air program. These equipment codes are listed below in Tables H-1 and H-2.

Table H-1. RRS Equipment Codes.

EQUIPMENT TYPE	EQUIPMENT CODE
GPS Antenna	GPSRX
Telemetry Receiving System	TRS
Signal Processing System	SPS
RRS Surface Observing Instruments System	RSOIS
Upper Air Workstation	UWKST
RRS/Upper Air System Administration	UASA

Table H-2. Other Upper Air Equipment Codes.

EQUIPMENT TYPE	EQUIPMENT CODE
Automatic Radiotheodolite (Reconfigured GMD)	ART1
Automatic Radiotheodolite (Reconfigured WBRT)	ART2
PIBAL Timing System (Balloon Tracking Equipment for ART1 & 2)	PBT
Upper Air Microcomputer	M003
CV-700 Upper Air Meteorological Processing System	ATIR
WL-9000 Upper Air Meteorological Processing System (2 Sites Only)	WL900
Wind Profiler (ERL Owned)	PROF
Wind Profiler HUB Equipment (ERL Owned)	PHUB
Profiler Surface Observing System (ERL Owned)	PSOS
Alaska Wind Profiler	UP2
Electrolyser Hydrogen Generator	HGE

NOTE: All incidental facility maintenance performed on RRS/Upper Air buildings will be reported using the EMRS Equipment Code "FAC".

2.2 Equipment Code Activation for RRS/Upper Air. RRS/Upper Air equipment codes are activated in EMRS by the Field Staff. Submit one WS Form A-26 to report all activities associated with the site preparation, installation and checkout of the equipment, system or subsystem. In many

cases, a Hardware Modification Note or Software Installation Instruction Note may include specific equipment activation instructions. Follow these equipment specific instructions to activate RRS/Upper Air equipment in EMRS. Prior to official activation, the NWS Electronics Staff will report all pre-acceptance activities using the equipment code "RSOIS" and the serial number "001".

2.3 Serial Number Locations and Assignments. In general, each RRS/Upper Air subsystem identified by an EMRS equipment code has a unique serial number. The location or assignment of each subsystem serial number is described in Table H-3 below.

Table H-3. Location of Upper Air Serial Numbers.

EQUIPMENT TYPE	LOCATION
RSOIS Air Temperature/Relative Humidity Sensor (ATRHS)	Located on a sticker at the center of the sensor wand enclosed in the aspirator assembly.
RSOIS Base Station (BASTA)	Located on a metal label on the connector side of the unit.
RSOIS Remote Processing Unit (RPU)	Located on a sticker on the inside door panel. The RPU serial number is the same as the System Data Logger (SDL) component serial number.
RSOIS Wind Sensor (WSENS)	Located on a sticker at the center of the unit body.
RRS Workstation	Located on a sticker on the back of the CPU.
RRS Signal Processing System	Located on a sticker on the back of the unit.
RRS Telemetry Receiver System	Located on the metal label on the front of the equipment rack.

NOTE: If a Serial Number of "000A", "000B", or "000C"appears in the site inventory, the EMRS database has not been updated with the correct serial number for the piece of equipment. Enter the proper serial number in the WS Form A-26. The Data Entry System will say, "Equip. Not found in Equip. Population Table. Do you want to correct? [Y/N]=>". Answer with a "N". The EMRS Analyst will be notified of the discrepancy and will update the inventory.

2.4 Remote Equipment Maintenance. In many cases, the RRS/Upper Air equipment is located at a remote site. When reporting maintenance activity on equipment at remote sites, use the Station Identifier (SID) of the remote RRS/Upper Air equipment site

2.5 Redundant Equipment Uniquely Identified in RRS/Upper Air. Maintenance activity reporting associated with redundant equipment does not apply to the RRS/Upper Air program.

2.6 System Administration. Use the Equipment code "UASA", Type Maintenance code "Z", and Action Taken code "Z" to report maintenance related system administration. The codes presented in Table H-4 are used to describe the type of maintenance related system administration work performed.

Table H-4. System Administration Codes.

CODE	DESCRIPTION
ARCH	Archive, backup.
HELP	Customer/user assistance, training, consultation.
SYSMAN	File management, patch, restore function, file and system reconfiguration/ configurations, data management, shell scripts, security, enhancements, shutdowns, user accounts, system performance, problem analysis.
MAINT	Functions and activities with contract maintenance.
NETCOM	All network issues and communication activities and tasks.

NOTE: Reporting maintenance related system administration duties does not preclude reports required as the result of normal maintenance activities (i.e. preventive, corrective, modifications, etc.).

3 Configuration Management (CM) Reporting. CM information related to scheduled routine maintenance, corrective maintenance, equipment management activities and engineering modification implementation is documented in EMRS by WS Form A-26. CM information is used to:

a. Provide program managers with an accurate record of site configurations.

b. Determine modification kit site distribution priority for approved engineering changes.

c. Identify sites having implemented a particular modification.

3.1 WS Form A-26 Data. CM data, collected via EMRS, is used to update databases supporting the Configuration Management Information System (CMIS). The CMIS provides users with site specific hardware and software configuration reports, as well as information concerning equipment modification implementation. Contact the Weather Service Headquarters (WSH) Maintenance, Logistics and Acquisition Division, Configuration Branch, (W/OPS13) at (301) 713-1892, for information or assistance regarding CMIS.

3.2 Categories of CM Reporting. CM Reporting requires additional data in the Parts Failure Information section of the WS Form A-2 when:

a. Parts or equipment replacement associated with a failure occur.

b. Parts or equipment replacement associated with scheduled routine maintenance occur.

c. Parts or equipment replacement associated with a special activity or sampling (installation of test configurations, retrofits, or inspections) occur.

d. An equipment is activated, deactivated, or modified

3.3 Equipment Failure Requiring Parts Replacement. When RRS/Upper Air equipment fails, the Field Staff must document the Lowest Replaceable Unit (LRU) that failed and order a replacement part. The part number marked on the equipment is used to cross-reference the Agency Stock Number (ASN) in Engineering Handbook 1 (EHB-1), for ordering replacement parts. The removal and replacement of the failed unit requires specific CM data reporting. These requirements are shown below.

a. For each part that fails enter the correct Agency Stock Number and Serial Number of the failed part.

b. For each replacement part enter the correct Vendor Part Number and Serial Number of the replacement part.

NOTE: When replacing an entire subsystem or a part of the subsystem having a uniquely identified serial number, complete two separate WS Form A-26s. The first WS Form A-26 (Deactivation A-26) contains the serial number of the subsystem being removed. The second WS Form A-26 (Activation A-26) contains the serial number of the newly installed subsystem

3.4 Modification/Software /Maintenance Note and Request for Change (RC) Implementation. In addition to the requirements outlined in paragraph 3.3, follow specific CM data reporting requirements outlined in each official instruction note. Ensure that the modification number has been entered in the WS Form A-26 and that the date-of-action is completed. General reporting requirements are defined in the Table H-5 below.

Table H-5. Reporting Guidelines for Modifications.

Modification Type	TM Code	AT Code	Mod. No.
Hardware Mod	M (Modification)	M (Modify)	The Mod #
Software Mod	M	M	S and the #
Maintenance Note	E (Equip. Mgmt.)	M	M and the #
RC Implementation	E	M	The RC #
Other Mods	S (Special Acct)	M	None

The MOD number field on the A-26, must be filled for all modifications. When reporting Field Modification Kits (FMKs), which are not a part of an official NWS modification note, use the FMK

number preceded by "FMK" on the A-26. When reporting Engineering Change Proposals (ECPs), which are not a part of an official modification note, use the ECP number preceded by "ECP" on the WS Form A-26. When reporting a modification that has no MOD number use the word "NONE". All time spent performing modifications is reported as miscellaneous time, in the Work Load Information area of the WS Form A-26.

3.5 Equipment Modification Autoload Process. The WSH is responsible for automatically placing a WS Form A-26 into the EMRS "Hold" area for all WSH directed engineering modification activities. The Electronics Staff may report the Modification/Software /Maintenance Note or Request for Change (RC) Implementation using this automatically loaded WS Form A-26.

3.6 Installation of Test Configuration. When test configurations are fielded in baseline controlled systems, specific CM data are required. The installation and removal of configurations must be reported. Test configurations have unique identifications to distinguish them from approved configurations. Specific CM reporting guidance will be provided with each installation instruction.

NOTE: CM Data Reporting Verification - If maintenance personnel have doubts about CM reporting requirements, contact the WSH Maintenance, Logistics and Acquisition Division, at (301) 713-1824, or the WSH Configuration Branch, (W/OPS13) at (301) 713-1892.